

A

Compleat Course O F Chymistry.

Containing near
Three Hundred Operations ;
Several of which
Have not been Publish'd before.

A L S O,

The Structure of several Furnaces,
with near Three Hundred Characters,
which are dispers'd in Chymical Au-
thors ; And such Instruments and Ves-
sels as are necessary in a Compleat Ela-
boratory. All cut in Copper.

By George Wilson, Chymist.

L O N D O N :

Printed, and Sold at the Author's House,
in Well-Yard, near St. Bartholomew's
Hospital ; And by Walter Kettisbury,
at the Bishop's Head in St. Paul's Church
Yard, 1698.

TO THE
Right Honourable
WILLIAM
Lord Paston,
Baron of *PASTON*,
Viscount and Earl of
Yarmouth

My LORD,

THE Kind Reception I
have upon all Occasions
met with from your Lordship,
Emboldens me to lay the follow-
ing Papers at your Feet; not
A 2 that

The Epistle Dedicatory.

that I pretend to offer any thing
worth your Lordships Favour,
your thorough Experience into,
and Exquisite Skill in whatever
relates to Chymistry, makes me
too Conscious to my self how lit-
tle this deserves your Patronage
and Protection.

But since I have no other way
left me of acknowledging the ma-
ny Obligations I lye under to
your Lordship, I rather choose
to run the hazard of my Repu-
tation on this account, then pass
off the Stage with the Guilt of
Ingratitude upon me, who must
ever attribute all I now enjoy at
Home to the Care and Goodness
of your Lordship.

Accept then my Lord, I be-
seech you, the Sincere, though
weak

The Epistle Dedicatory.

weak Endeavours of my Declining Years, and judge not my Respect and Duty by the meanness of the Performance. The Honour of your Lordships Approbation will Fortifie me against Censure; And however defective I may seem to have been, yet I have still the hopes that I may by this means Incite others to greater and nobler Attempts of this kind, and put them upon a deeper Search into the more close Recesses of this so Useful, but Mysterious Art.

And here, my Lord, I cannot omit, with humble Submission, Suggesting to your Lordship, how happy wou'd the present Age be, as well as Posterity, if so great a Genius as your Lordship wou'd please to borrow some

The Epistle Dedicatory.

some few Minutes, from your other more weighty Affairs, to Collect the Curious Observations you have made in Cymistry, and Communicate them to the World; What might we not expect from such Indefatigable Industry, and so great a Capacity! Even the Admirable Mr. Boyle, where he alive, might with pleasure see himself out-done, in what was his Chiefeſt Darling and Miftris.

But I ſhall wave the Enlarging on this Subject, leſt by attempting to give your juſt Praifes I ſhould leſſen that Character, which all who have the Honour to know your Lordſhip, muſt confeſſ you truly deſerve.

May

The Epistle Dedicatory.

May your Lordship enjoy a full Measure of Health and Honour; and may After-Ages with Admirations behold your Lordships Excellent Virtues still shining forth, in a Generous and Noble Posterity, is the Earnest Prayer of

My L O R D,

Your Lordships

Most Faithful,

Humble, and

Dutiful Servant,

George Wilson.

TO THE READER.

I Need not Enlarge my self in the Use of *Chymistry*, and the great Improvements made by it among the Affairs of Mankind; it has been done by many and better Hands; but in *Physick* it is of that vast Extent, that every *Age*, for some Hundreds of Years, has Administred to its Growth; and with that Success, that there are few *Samples* of Note, in any of the Kingdoms, whether *Mineral*, *Vegetable*, or *Animal*, but have received some Advantage by it: The common Approbation of the Learned has not only render'd it unquestionable, but its Use has made it one of the chief Props of *Physick*; and without doubt it is capable of being more Im-

To the Reader.

Improv'd, and will be in so Capacious a Subject as Nature it self.

But to the Matter in hand, I freely acknowledge the Collection I have made is not New, nor can I say I design'd it, being always persuad'd it was the best way to place those several Processes I have added out of my own Store, under such General Heads they naturally belong'd to, in such manner that it might make up an intire or compleat *Body of Chymistry.*

As for the Processes which are not mine, but have been Extant before, I have made use of them as things necessary to my Design, but with some Improvement; because I have joyn'd new Observations about the way and manner of working them, which I have found not only convenient, but sometimes absolutely necessary, by the Experience of near Fourty Years, wherein I have been a Diligent Operator in Chymistry.

To the Reader.

I have divided the whole into Two Courses, as may be seen at the end of this Book, to save such Gentlemen as are Curious in Natural Philosophy, the Writing or Transcribing Processes. I have very much Enlarged the Courses, and have so order'd it, that the whole may be Finish'd in the space of one Year.

I have all along studied Brevity, and therefore have rejected those things which are frivolous, or of little Use: And my Answer to them who find Fault with the Stile is, Perspicuity was more my Endeavour than Ornament; thinking it sufficient in Matters of this Nature, if I can be understood without any difficulty.

I shall say nothing of the Processes I have annexed, but leave them to the Publick; only taking notice, That I have briefly given the *Properties, Use and Dose* of each Medicine, that there might be nothing wanting to render it Compleat.

THE

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There are several Errata's escaped the Press, those
which corrupt the Sense are as follow.

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powr'd for pour, p. 42 the Process is misplac'd, and
should have come in after the Third. p. 64. l. 4. r.
Copper for Powder, p. 66. penult. add put, p. 103.
l. 13. add half, p. 105. l. ult. r. half a Drachm, p.
271. l. 9. dele both.

The

The Introduction.

AS in all Arts and Sciences whatever, there are certain Instruments and Terms of Art necessary to be known, before they can possibly be understood, so in *Chymistry* there are certain Requisites to every Operation before it can be performed, and these are,

First, An Elaboratory, in the Erecting of which care ought to be taken that there be a good Light, plenty of Water, and large Chimneys, for the ready Conveyance of Obnoxious Fumes.

Secondly, Instruments and Vessels, and these are of different sorts, and various Figures, according to their several uses: you will find the Description of those most in use, in the first Cutt of this Book.

Thirdly, Furnaces, which are also of different Forms, some for moist, and others for dry Heats: the moist are *Bal. Maris*, *Bal. Vaporos*, &c. The dry are the Sand Furnaces, Reverberatories, or open Furnaces for naked Fire, &c. which may be seen at large in Chymical Authors. But I content my self with describing

scribing those that are necessary ; they
are in the Plates properly plac'd in this
Treatise.

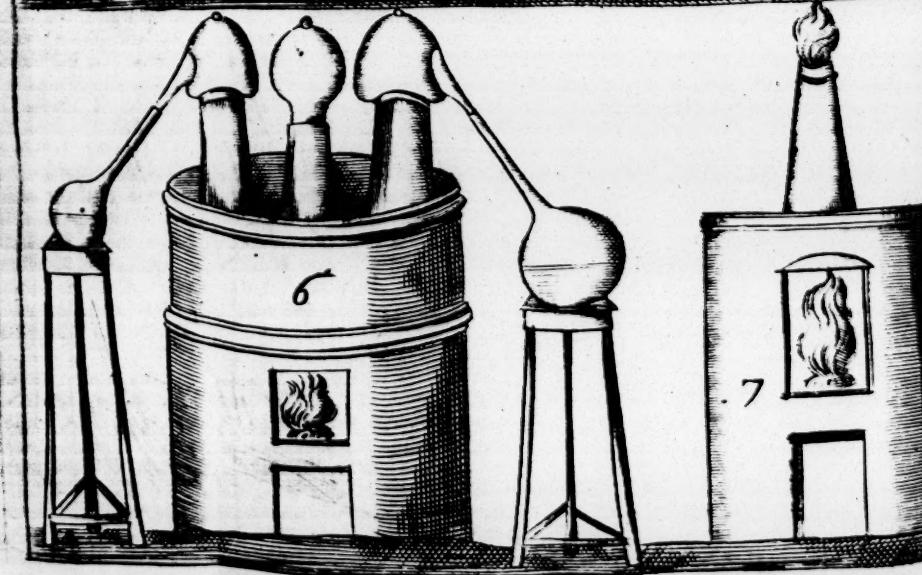
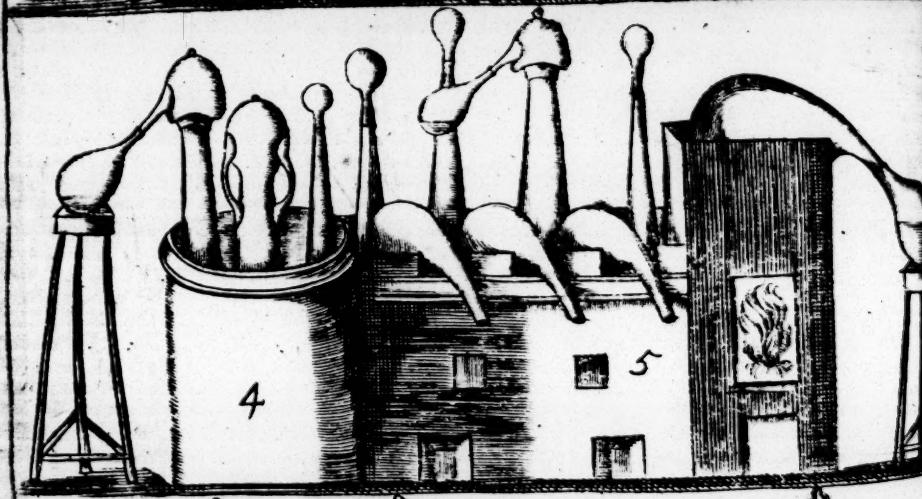
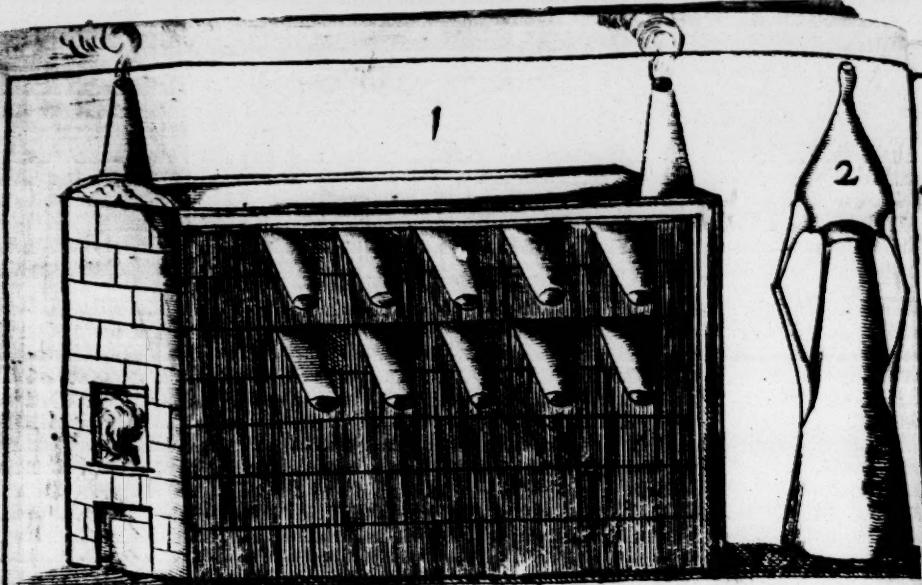
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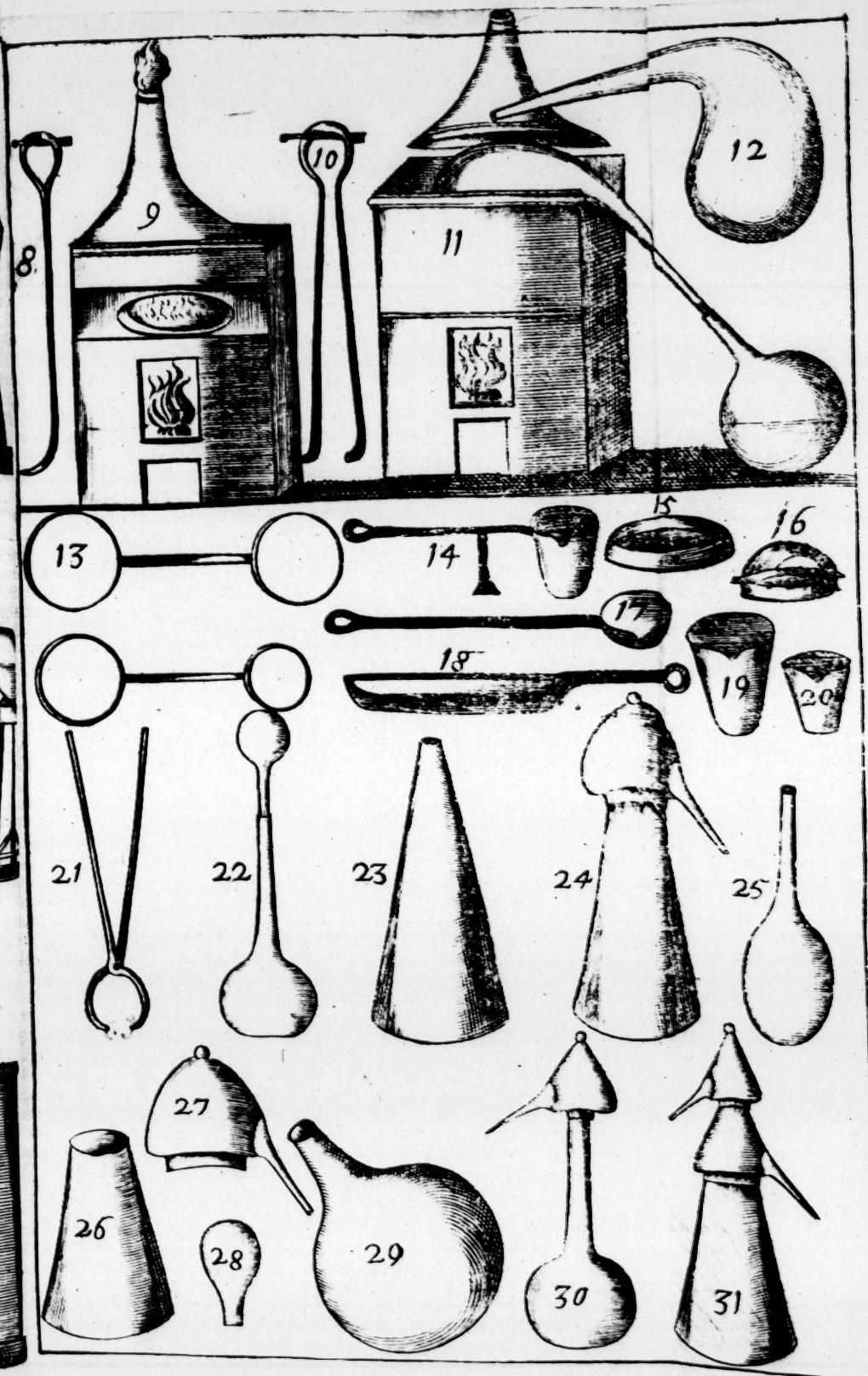
Fifthly, Degrees of Fire.

Sixthly, Such Terms of Art as you will
meet with in Chymical Authors ; And,

Seventhly, Such Characters as are dif-
pers'd in their Writings.

A





The Explanation of the Figures.

- 1 *A Reverboratory Furnace, to Distil with twenty long Necks.*
- 2 *A Pelican, or Circulatory.*
- 4 *A Balneum at the end of the digest. Furn.*
- 5 *The Sand Bath of the digesting Furnace.*
- 6 *The Balneum Maris.*
- 7 *A melting Furnace.*
- 8 *A Hook to clear the Grate with.*
- 9 *A Testing Furnace.*
- 10 *A Pair of Tongues.*
- 11 *A small Reverboratory, or an open Furnace, for one Retort.*
- 12 *A Retort.*
- 13 *Iron Rings to cut Glasses withal.*
- 14 *A Cone, or Antimonial Horn.*
- 15 *A Test.*
- 16 *A Test with its Muffle.*
- 17 *A Ladle.*
- 18 *An Ingot.*
- 19 *A Crucible.*
- 20 *A less Crucible.*
- 21 *A Pair of Tongues to take a Pot out of the Fire withal.*
- 22 *Two Bolt Heads, or Matrasses, made a Circulating Glass of.*
- 23 *An uncut Body.*
- 24 *A Body and Head.*
- 25 *An Egg, or Oval Matras.*
- 26 *A Cut Body.*
- 27 *A Distilling Head.*
- 28 *A Blind Head.*
- 29 *A Ballon, or Receiver.*
- 30 *A Matras, with its Head.*
- 31 *A Body, with a double Head.*

Chymical Charact ^r Notes of Metalls	Chymical Charact ^r Day Night
Saturn Leade ♀	
Jupiter ♀	
Mars Iron ♂	Notes of Mineralls & other Chymicall thin
Sol. Gold ☽	
Venus, Coper ♀	Antimony ♂
Mercury Quicksilv. ♀	Arsenick ☽
Luna Silver ☽	Auripigmentum ☽
	Album ☽
<i>Notes of 12 Signes of the Heavens</i>	
Aries	Aqua Vitæ ☽
Taurus	Aq: Fortis ☽
Gemini	Aq: Regis ☽
Cancer	Borax
Leo	Balneum Mariae
Virgo	Babell: Vaporis ☽
Scorpio	Brick ☽
Sagitari	Black Sulphur ☽
Libra	Blew Violet ☽
Aquaru	Crocus Marlii ♂
Capricorn	Crocus Veneris ☽
Pisces	Cinabar ☽
	Caput Mortuæ ☽
<i>Notes of 4 Element</i>	
Fire	Common Salt ☽
Ayre	Crystal ☽
Water	Coagulate H E
Earth	Crucibl ☽
	Cerus ☽

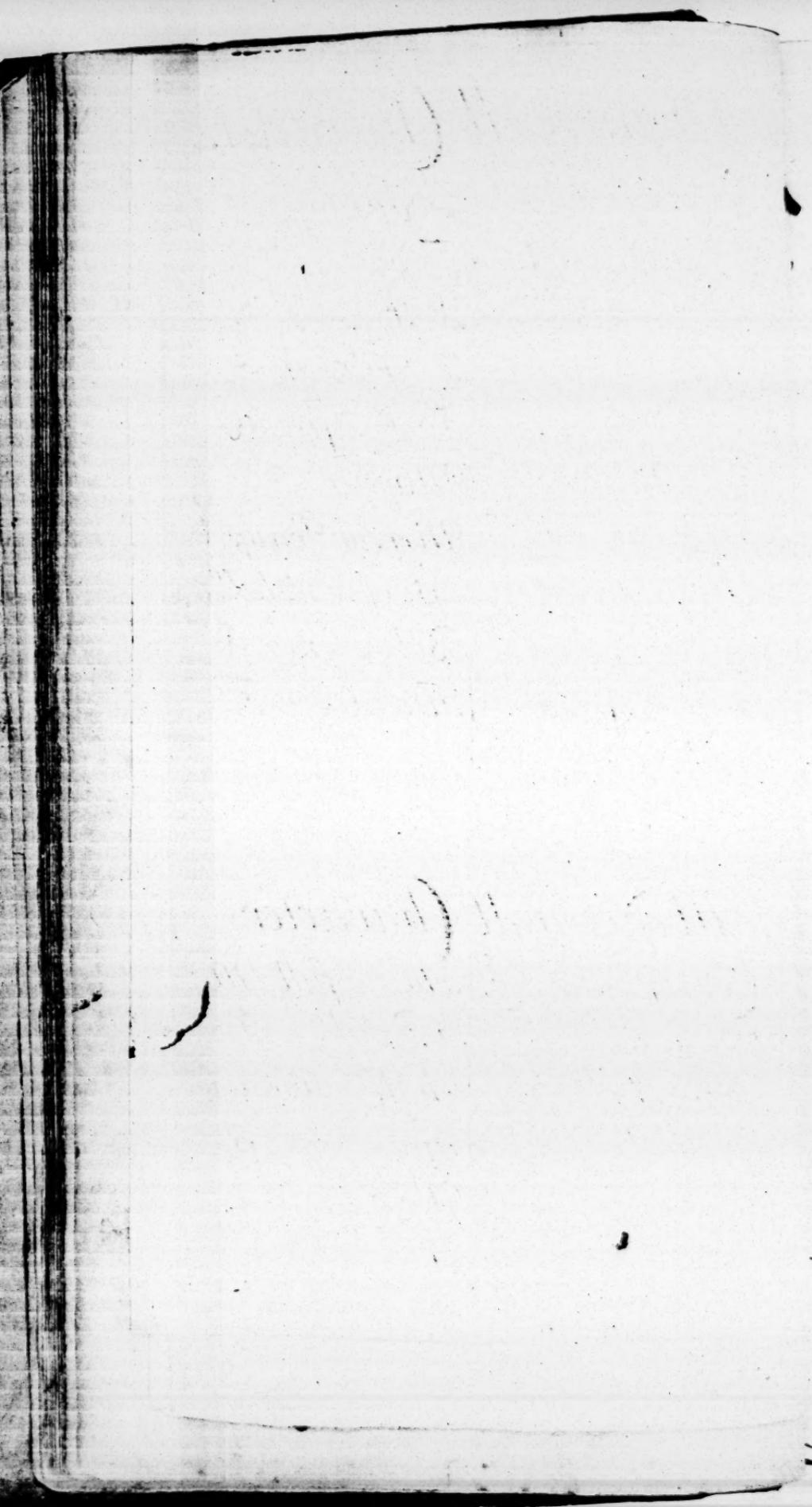
Chymical Charact ^r	Chymical Charat ^r
Distild Vineger & **	Salt of Cali 8: □
Distill ♂	Sulphur 8: □
Flowers of Antimo. ny	Sulph. Philosoph. 8: □
Flowers of Tiles □	Sp. of wine ♦ ♦ V:
Filings of Steele ♂	Spiritt 8: Sp. ♂
Gravelled or Pottashes ♀	Sulphu. Vivu: 8: V
Gumm ♂	Soape □
Glaſs ♂	To Purifie 8:
Lime C C	Tartar 8: □ X
Light or day ♂	Tutia X
Litharge ♂	Talk X
Lutu. Sapientu: L	To Calaine A
Mercuri of Saturn h	To Digest 8
Marcasite ♀ ♀	To fix 8
Niter h	To Sublime 8: 8
Night o	To Precipitate 8: 8
Oyle ♂: x: ♀	Verdigrease 8
Orpinient ♂: n	Vitriol 8: G
Pouder of Bricks □	Vrin □
Philosopher's Sui: 8	Vineger 8
Quintessence Q E	Wax 8
Quick Lime ♀	Wine V
Realgar ♂: x: ox	Whit Vitriol 8: 8
Retort ♂	Wheele Fire 8
Sublimat Mercur: ♀	
Sand	
Siratu. Superstratu: fff. sss	
Sal gem ♂	
Sal Armoniack *	

Chymicall Characters

Alembick	XX	Soape weede	~
Ashes	E	To Lute	N
A Covered Pott	Q	Pott ashes	Y
Cement	Z	To Filtrate	Z
Ink	□	To Purifie	○
Mouth	⊗	Magnet	Ω
Powder	⌚	Mercur Praeup:	⌚
Harts horn	CC	Sp: of Hartsho ^m CC	
Houre	ꝝ	Bole Armo	ꝝ
Boz mineral	ꝝ	Tincture	ꝝ
Limbeck	XX		

Medicinall Characters

Lib: a pound	Lib:	a hand full	m:
an ounce	ꝝ	a Pugil	P:
a Drachm	ꝝ.	a half Quantity	ſſ:
a Scruple	ꝝ.	apart	p
agraine	gr.	Number	n°
		of Each	āā,



A

Compleat Course

O F

Chymistry.

Of LVTES.

To Defend a Glass in a naked Fire.

TAKE Yarmouth-Sand, Scoria of Iron, Tobacco-Pipe-Clay, of each one Pound, Glafs, and fixt Nitre, of each four Ounces, of course Tow, cut short, half a Pound; dissolve the Tobacco-Pipe-Clay in Water, and beat the Glafs and Scales of Iron to fine Powder; then mix all together, beat and work this mixture well, 'till it comes into a stiff Paste; spread it upon the Retort with a Knife, the thickness of Half a Crown, to the middle of the Neck of it; let it dry gently, after which you may use it.

B

With

With this Lute you may fasten the Receivers in the Distillation of Corosive Spirits, *viz.* Ol. Vitrioli, Spirit of Nitre, Spirit of common Salt, Allum, Aqua Fortis, Aqua Regis, &c.

To Lute Limbecks.

Take Starch, Glue, Flower, and Water boil'd, or Flower and Water well beaten together; any of these spread upon Slips of Paper will serve; but when you Distil, or Rectifie Spirit of Verdigreece, Vineger, Tartar, Guiacum, Box, strong Spirit of Wine, Spirit of Sal Armoniack, or Hart's Horn, &c. you may use slips of Bladder, or Parchment, dipt in equal parts of Flower, and slack'd Lime, beaten into the Consistence of a Syrup, with the Glear, or white of an Egg.

To Fortifie crack'd Glasses.

Take the Scrapings of hard *Suffolk*-Cheese, and Calx Vive, of each alike quantity, beat them well together, with the White of an Egg, to the thickness of a Syrup; dip Linnen Rags in this mixture, and lay it presently upon the crack. Remember you mix no more at a time, than you use in the space of a Minute.

To Seal a Glass Hermetically, is to heat the Mouth of the Glass gradually, 'till it

is red hot, and pliable, which you may do either with such a Lamp as the Goldsmiths use to Solder with, or by a clear Charcole-Fire, and with a pair of Pincers (being also red hot) nip it up so close, that no Air can pass in, or out.

There are many other Lutes, but these are sufficient to carry on any Chymical Operation.

Of the Degrees of Fire.

THE several Heats requir'd in Chymical Operations are as follow.

Balneum Mariæ, is warm or hot Water. *Balneum Vaporosum*, is the Steam or Vapour of Water. The *Heat of Ashes*, is sifted Ashes. The *Heat of Sand* is Sifted Sand. There is also an Heat of Filings of Iron, *A Reverberating Heat*, or naked Fire. And lastly, a *Melting Fire*. The *Water*, *Ashes*, *Sand*, and *Filings of Iron*, are contain'd in proper Vessels, made of Copper or Iron, and placed in Furnaces. The *Reverberating*, or *open Fire*, is made in the Furnace we call a *Reverboratory*, or open Furnace.

All these Heats have their *First*, *Second*, *Third*, and *Fourth Degrees of Fire*.

The *First Degree*, is a handful of small Cole, or three or four Charcole, of the

thickness of a Man's Finger, well kindled.

The *Second Degree*, is six or seven such Charcole kindled.

The *Third Degree*, is such a one as will make the Fire-place of the Furnace, of a Worm red.

The *Fourth Degree*, is such as will cause the Fire-place of the Furnace to be of a white Heat, or the most extream Fire you can make.

Of *Dry Heats*, *Ashes* is weakest, *Sand* stronger than *Ashes*, and *Filings of Iron*, stronger than *Sand*.

Of such Terms as are used in Chymistry.

A *Malgama* is to mix $\text{\textgreek{g}}$ with $\text{\textgreek{o}}$, $\text{\textgreek{p}}$, $\text{\textgreek{h}}$, or $\text{\textgreek{u}}$, which is to be done thus:

First, melt the $\text{\textgreek{o}}$, $\text{\textgreek{p}}$, or $\text{\textgreek{h}}$, &c. so that it may but just flow, then heat the $\text{\textgreek{g}}$ till it begins to Fume; and by little and little, pour the $\text{\textgreek{g}}$ to the melted Metal, and stir them about with a warm Iron Rod, 'till they are Incorporated: If you wou'd make the *Amalgama* so hard as to beat into a Powder, you must take three parts of the hard Metal, to two parts

parts of ♀: If you wou'd have it so soft as to spread, you must take two or three parts of ♀, to one part of the hard Metal.

Alcohol is to reduce any Substantial Matter into an Impalpable Powder; also, very high Rectified Spirit of Wine, is call'd *Alcohol*.

Cement, is to stratifie Lamels of Gold with a Paste, made of one part Sal Ammoniack, two parts common Salt, and four parts Tobacco-Pipe-Clay, or Tobacco-Pipes beaten to Powder, moistened with a sufficient quantity of Urin: This is called the Royal Cement.

Coagulate, is to Evapourate a Liquid to a Substantial Mass.

Circulation, is a Motion given to Liquors, contained in a double Vessel, or Circulating Glass, excited by Heat to Ascend and Descend.

Cohobate, is to return the Liquor which has been Distilled, upon the Matter remaining in the Vessel, after Distillation.

Congeal, is to let a Metal, Wax, or Fat, which is melted, to fix, or cool, when taken from the Fire.

Detonation, is a Noise that is made when the Sulphureous Parts of any Mixture rush forth with Impetuosity; its also call'd *Fulmination*.

Digestion, is some Matter put into a Menstruum, to infuse in a gentle Heat.

Distillation per Ascensum, is when the Fire is made under that which is to be Distilled.

Distillation per Descensum, is when the Matter which is to be Distilled, is plac'd under the Fire, by which the Spirits are Precipitated and Forc'd down-wards.

Dissolution, is to reduce any hard Body into a Liquor, by the help of a proper Menstruum.

Edulcorate, is to sweeten, or make insipid, some Matter which is Impregnated with Salts, by washing it with Distilled, or Fountain-Water.

Effervescency, is the Ebullition of a Liquor by boyling; or when two Liquors of a contrary Nature are put together, which cause Ebullition without separating the parts.

Fermentation, is an Ebullition raised by Spirits that endeavour to separate themselves from the Body, but meeting with Earthy Parts that oppose their Passage, they swell, and rarifie the Liquor 'till they find their way out: In this Separation of Parts, the Spirits divide in such a manner, as to make the Matter of another Nature than it was before

Filtration, is to purifie a Liquor by passing it through a brown Paper; or lay stripes of Cotton or Woollen in the Vessel which contains the foul Water, to the middle of the stripes, the other end hanging

hanging over the Vessel, which receives the filtered Liquor.

Fumigation, is to make one thing receive the Fume of another.

Granulation, is to pour a melted Metal through a new Birch Broom, or Brass or Iron Culender, into cold Water.

Levigation, is to grind any hard Matter into an impalpable Powder upon a Marble.

Menstruum, is any Liquor capable of dissolving Mettals, Minerals, Gums, or any other hard Substance into a Liquor.

Mortification, is to change the outward Form of a Mixture, as ♀, &c. Also Spirits being mixt with other things which deprive them of their Strength.

Putrefaction, is the Corruption of any mixt Body, whether by the Air, or other Mixtures, and which always emitts a smell different from the Body before it was Corrupted.

Projection, is to put into a hot Crucible, by little and little, any Matter. Also to put a small quantity of something, to a greater quantity of a Mettal, to Meliorate the Mettal.

Rectification, is to Distil Spirits after their first Distillation, in order to separate from them such Heterogenous Matters as have risen with them in their first Distillation.

Reverberation, is to make the Flames of the Fire beat upon the Matter which is Reverberated.

Revivification, is to reduce any Preparation of ♀, into its Form again.

Sublimation, is to elevate any Volatile Matter, into the upper part of such Vessels as contain them, by heat of Fire.

Stratification, is to lay two different things, bed upon bed, or lay upon lay, one over another.

Præcipitation, is to make any Matter dissolved, fall to the bottom of the Vessel, by putting something into the Dissolution, which is more agreeable to the Menstruum.

The Principles of Minerals in the Mines,

(Not to say any thing of the Universal First Matter of Things, not Specificate) are *Argent Vive*, and *Sulphur*; out of these Two are all Metals Generated, and all *Mercurial Minerals*, of which there are many and divers Species, and by the endeavours of Nature, all tending to the Perfection of *Gold*, but by different Accidents hindred, or at least retarded, in their attaining to the intended Perfection, for according to the Purity, or Impurity of these Two, are different Metals produced.

C H A P. I.

Of G O L D.

GOLD, the Purest of all Metals, is by Nature Generated of a most Pure Fixed \wp , and a small quantity of clean fix'd Sulphur, of most pure Redness, which tingeth the \wp : That it is most Mercurial, appears by its easie Conjunction with, and Reception of pure \wp ; that this \wp is Fixed, and clear from all Operations upon it by Fire; that the Sulphur of it is tinging, is manifest by this, That joyned rightly with pure \wp , it transforms, or changeth its Colour, into a most pure Red; that it hath greater quantity of \wp than Sulphur, is clear from its ready admission, and reception of \wp .

It is a most Noble Subject for Medicine, in the hands of an Expert Artist; witness Dr. *Anthony's Aurum Potabile*.

Purification of Gold.

Put one Ounce of *Gold* into a Crucible; when it is red hot, put to it Reg. Antimony three Ounces; let them melt together in a strong Fire, 'till little sparcles fly about in the Crucible, then cast out

out the Golden Reg. into a little Cone, or let it stand in the Crucible till it is cold; then beat off the Scoria, and put the Reg. into a Crucible, and set it again in the Furnace to melt; when it is in Fusion, cast upon it two Drams of Salt Peter, and a quarter of an Hour after that, cast two Drams more of Salt Peter, and so do the third time, still keeping it melting, 'till you perceive it emits no Fumes, then pour it into an Ingot, and beat the Scoria off from the Gold. It is then perfectly Fine, and fit for any Operation.

There are other Purifications of *Gold*, *viz.* *per Cupel*, *Cement*, &c. but this is the best.

Amalgamation of Gold.

Take of Fine Gold half an Ounce, beat it into thin Plates, heat them red hot in a Crucible, put to it of clean ♀ (first made hot in a Crucible) two Ounces, and stir them about together with a hot Iron Rod till they grow cool; then wash them in a Stone Mortar, with clean Salt and warm Water, till the *Amalgama* will emit no blackness; this done, it is pure: But if it be too soft for your purpose, you may squeeze some ♀ from it, through a Diaper Cloth.

If you would reduce the *Gold* into an Impalpable Powder, put the Amalgama into an unglaz'd Dish or Poring, place it over a gentle Fire, and the \wp will ascend in a Fume, and leave the Gold in an Impalpable Powder.

Aurum Fulminans.

Take what quantity of *Gold* you please, in thin plates, File dust, or small Granules, put it in a separating Glafs, or any other convenient one; pour upon it, by little at a time, four times its quantity of *Aqua Regis*, or Spirit of Nitre, Bezoardick; place the Glafs on warm Sand, and let it there continue till all the *Gold* is dissolved; then put the Dif-
solution into five or six times its weight of clean Water, mix them well by sha-
king, then drop to the Solution Oil of Tartar, *per deliquiem*, or Spirit of Sal Ar-
moniack, made with Salt of Tartar, or Pot-Ashes, till the Ebullition is over, then let it stand ten or twelve Hours, for the *Gold* to precipitate, and then pour off the Water by gentle Inclination; wash it with several clean Waters, till the Golden Calx is insipid; dry it in a gentle Heat, between clean Paper, and keep for use.

Its Operation is Diaphoretick.

Its Dose from five to twenty five Gr. given in Pestilential Fevers, and Small Pox, with good Success, and is often given to those who have too much φ in them.

N. B. That you be careful in drying of it, lest it take Fire.

*Aurum Potabile, as I Prepared it for
the Chief Physician of a Great
Prince, 1692.*

I Dissolved four Ounces of *Gold* (perfused as before) in one Pound of Bezoart. Spirit of Nitre, and drew the Spirit from the Gold in a Heat of Sand, return'd the same Spirit upon the Gold, and Distill'd it off again. I made the Second Cohobation with the same Spirit, as also the Third, Fourth, and Fifth Cohobation, with one Pound of New Spirit of Nitre Bezoart. And likewise the Sixth, Seventh and Eighth Cohobation, with one Pound more of New Bezoart. Spirit of Nitre.

Whilst I was doing this, I made the Oil of Chalk thus: I took half a Pound of clean Chalk, scrap'd it, and dry'd it before the Fire in an Earthen Dish, then

put it into a Cucurbit, and pour upon it, by little and little, one Pound and half of Spirit of Nitre, which dissolved the greater part of the Chalk. I Filtered the Dissolution, put it into a Retort, and Distill'd it in Sand; that which Distill'd from it came off almost Insipid; I dissolv'd that which remain'd in the Retort, in part of the Flegm which I drew off from it; it set new Feces; I Filter'd the Dissolution again, and Filter'd, and Exsiccated, as before; I dissolv'd it again in the Flegm which came off, it then totally dissolv'd, without any Feces; I Exsiccated it again, and mix'd of it, and the aforesaid Calx of *Gold, ana,* and ground them extreamly well together in a clean Marble Mortar, with a Glas Pestle.

I then divided the whole Matter into equal parts, and with one Part I ground double its weight of purified Salt Peter, and with the other part treble its weight of Sal Armoniack Sublimed twice, and equal its weight of *Stellate Regulus Martis,* in subtil Powder; each Parcel being well mixt by a long Trituration; I put this Mixture in a Retort; placed it in a Sand Furnace, made gradual Fire under it for eight Hours, and kept it two Hours longer in the most extream degree of Fire; the Sal Armoniack rose into the neck of the Retort, so much Impregnated with the

the Sulphur of Gold, that it was as red as Blood.

The other Mixture of Golden Calk and Nitre, I put into a red hot Crucible by a quarter of a Spoonful at a time ceasing one Minute between each Projection; when all was in, I gave it strong melting Fire for three Hours, and before it was cold, made it into Powder in a clean, warm, Iron Mortar, and put it presently into a clean and dry Cucurbit, and put so much highly Rectified Tartaris'd Spirit of Wine upon it, as to appear four Fingers above the Mixture, then inverted another Glass into the Mouth of the Cucurbit, to make it a Circulating Vessel, and let it stand in a simmering Heat for twenty four Hours, in which time the Spirit of Wine was well tinged, I decanted it, and put on more Spirit of Wine, and let it stand twenty four Hours in the same manner as before, and so did the third time, but then it took but little Tincture.

I ordered the Sublimed and Impregnated Sal Armoniack, with Spirit of Wine, as I did the other; I put the Tinctures of each parcel apart, into Cucurbits, adapted Heads and Receivers to them, and in a gentle Heat drew off the Spirit of Wine, not leaving above eight Ounces in each Glass, both the Tinctures were deeply tinged, of which I gave a part to the Gentleman that Employed me, who seemed

to receive them with great Satisfaction,
and Gratified me generously.

The Operation of both the Tinctures
are Diaphoretick, and esteem'd great
Cordials.

Their Dose from five to twenty five,
or thirty Drops, in a Glass of Spanish,
or French Wine, or any other Vehicle,
even to Water.

They are good in *Cachexies*, *Consump-*
tions, all sorts of *Fevers*, and to such
whose Bodies have been over-charged
with *Mercurials*.

N. B. The several Cohobations are
to Subtilize the *Gold*; the Calcin'd and
Purify'd *Chalk* is mixt with it for a Bole,
which by that Purification is Subtiliz'd
sufficiently to mix with the Minute Parti-
cles of the *Gold*, the better to make it
give forth its *Sulphur* to the *Menstruum*.
In its Fusion with the *Salt Peter*, it emits
its pure *Sulphur* into the *Nitre*, the more
gros part falling to the bottom in a *Re-
gulus*.

Its being Projected into the Crucible,
in so little a quantity at a time, and so
leisurely, is to prevent its boylng over,
which it would do by too hasty Pro-
jections.

Its being mixt with clean *Sal Armoni-
ack*, is to cause its pure *Sulphur* to sublime,
it

it being the nature of *Sal Armoniack* to carry up Metallick Sulphurs.

The Tinctures are taken each by themselves, that the Physician may use them alone, or mixt, as he pleases.

When we reduced the Gold, we had three Ounces, three Scruples, two Drams, and five Grains, of a little paler Colour than it was at our first Dissolution of it.

CHAP.

CHAP. II.

Of SILVER.

SILVER, or *Luna*, is Generated or Produced by Nature, of pure *Mercury*, and a pure clean, and fixed white Sulphur, but comes not yet up to the Purity and Fixation of Gold; as is evident by its Diminution in the Fire, as also of its Sulphur, which is neither fully fixed, nor incombustible. But though its Sulphur, compar'd with that of Gold, cannot properly be said to be fixed, yet with respect to other Metals, it may be called Fixed and Incombustible.

Preparations of Silver.

Purification by the Cupel.

SET a Cupel, made of Bone-Ashes, in a Melting Furnace; make a gradual Fire to it, till the Crucible is red hot; and to every Ounce of Silver you design to Purifie, put four Ounces of Lead. When it is melted, put in your Silver to the middle of the Teſt, keeping still a good Fire about it (under a

C Muffle)

Muffle) till you see the Silver lye like a Polish'd Lump in the middle of the Test. Then let it cool, and beat it from the Test, and it is perfect, fine, and fit for any Physical Preparation.

Chrystals of Silver.

Take of the Cupel'd Silver, what quantity you please, put it into a Separating Glafs, or Cucurbit, and put to it four times its weight of good Aqua Fortis; set them in Sand, over a gentle Fire, till the Silver is dissolved, then Evaporate two Thirds of the Liquor, and set it in a cold place to shoot into Chrystals.

The Infernal Stone, or Silver Canstick.

Take of the Chrystals of Silver one Ounce, put them in a Crucible which is capable of containing five or six times their quantity, by reason they are apt to boil and swell: You must give a very gentle Heat till the Ebullition is over, then increase the Fire a little, till the Silver sinks, and flows like Oil, and cast it into a warm greas'd Ingot; keep it in a Box, with some Cotton, in a dry place.

The Silver Pill.

Dissolve one Onnce of Refined Silver in three Ounces of Spirit of Nitre, in a Matras; Distil off all the Spirit of Nitre to dryness, then dissolve the Matter remaining, in as much Rose-water as it requires; Filter and Evaporate again to dryness. Then take two Ounces of Refined Sal Prunella, and grind it well with the Lunar Calx, in a Marble Mortar, with a Glass Pestel, and put to it again as much Rose-water, as is fit to dissolve it; Filter and Evaporate again to dryness. When it is cold, put it again into a Marble Mortar, and add two Ounces of the finest Wheat-Flower; grind them well together, with a sufficient quantity of Rose-water, to make them into Pills, of the bigness of a small Pea; when the Pills are form'd, dry them between Papers, and keep in a wooden Box for Use.

Their *Operation* is Cathartick, and Diuretic.

They are given in all Distempers of the Head; and very successfully in Drop-sies.

Their *Dose* is from half a Pill, to one Pill and an half, or two Pills.

The Precipitation, and Tincture of Silver.

Dissolve one Ounce of Fine Silver, in three Ounces of Spirit of Nitre, in a Glafs Vessel, plac'd upon warm Sand; when it is dissolved, put it into sixteen Ounces of Filtred Salt Brine: The Silver will precipitate in a white Powder; let it stand two Hours to settle, then pour off the Water by Inclination; wash the Lunar Calx with warm Fountain Water, till it is insipid; then dry it upon clean Paper; when it is dry, put it into a Matraſs, and pour upon it twelve Ounces of Spirit of Wine, to which put half an Ounce of Volatile Salt of Urin; stop the Matraſs with another Glass, fitting its Mouth; Lute the Joynt with Bladder dipt in the white of an Egg, beaten well with a little Water, then set it in a gentle Heat twelve or fifteen Days, shaking it about once in twenty four Hours; in which time it will have acquired a Sky-coloured Tincture: When cold, Un-lute the Glafs, Filter the Tincture, and keep for use.

Its *Operation* is Diaphoretick, and Diuretick. It is given in *Apoplexies*, *Epilepsies*, *Palsies*, and all Distempers of the Head.

Its Dose is from five to twenty five, or thirty Drops, in any proper Vehicle.

The Calx remaining in the Cucurbit, may be reduced into Silver again, by mixing it with equal its weight of Charcole Dust, and a fourth of its weight of Borax, giving them a good Fluxing Fire in a Crucible.

Diana's, or the Philosophical Silver Tree.

Dissolve one Ounce of Fine Silver, in three Ounces of Rectified Spirit of Nitre ; pour the Dissolution into a Matras, in which there is a Pint of Clean Fountain-Water, and two Ounces of clean Crude ♀ ; let the Matras be no bigger than to contain this quantity ; cover it loosely with some Glas, to keep out the dust, and set it by in some place where it may not be mov'd for five or six Weeks ; in which time you will see an Idea, or Representation, of a Tree, spreading forth its Branches, with little knobs at their ends, resembling Fruit.

Another Curiosity of this Nature may be perform'd, with a Dissolution of Silver in Spirit of Nitre, and Distill'd Vinegar ; but neither of them being of any other Use, this will be sufficient at this time.

Obſer-

*Observations.**Dissoluti-
on.*

Make all the Dissolutions of D , or any other Metal, or Mineral, with Aqua Fortis, in a Chimney, to avoid the Nitrous Fumes which are hurtful to the Head.

*Purificati-
on.*

Lead is made use of to Separate such base Metals, as Superficially adhere to the Silver. For being full of Sulphureous Parts, it readily absorbs, and sucks up the base Metals, which also abound with foul Sulphurs, and will not permit them to enter the close Pores of the D .

The Test.

The Test is made of Bone-Ashes, because these Ashes contain no fix'd Salt; and therefore is Porous enough to suck in the Lead, with the baser Metals, which adhered to the Superficies of the Silver.

Chryftal.

The Chryftals, or Vitriol of Silver, receive their Cathartick Quality from the purify'd Sal Prunella, with which they are mix'd. For the sharp Points of the Spirit of Nitre, which adhere to the Lunar Chryftals, are blunted by the Sal Prunella, which makes them slide through the Bowels, which otherwise would Corrode them, and be as Fiery a Cauftick, as the Infernal Stone.

Precipit.

The Precipitated D cannot be totally Separated from the Nitrous Spirits, by washing, therefore the Tincture is not

(as)

(as some fancy) the pure Sulphur of \gg Separated from its Terrestreous and Saline Parts, by the Spirit of Wine, and Salt of Urin; but it is part of the Lunar Calx, dissolv'd by the Spirit of Nitre, which sticks to the Particles of the Calx, and so Communicates that Sky-Colour to the Menstruum; for I have more than once Reduced that Tincture into Malleable Silver.

The Philosophical Tree is a Chrystral-
lization of the dissolved Metals, which
in five or six Weeks time will appear of
different Forms, according as the quan-
tity of Water, and Capaciousness of the
Vessel which contains it. For, if there
be too little Water, it will be a confus'd
Lump of Chrystals; if too much, it will
fall into a Precipitate.

The Dissolution of *Silver* is several
ways Precipitated (*viz.*) by a Lixivious,
Urinous, or common Salt, and by Plates
of Copper. And again, Copper will be
Precipitated by Iron; and that again by
Lapis Calaminaris; and the *Lapis Cala-
minaris* will be Precipitated by a Lixivi-
um of fix'd Nitre, or Salt of Tartar;
and that Lixivium, by Evaporation, will
become common Salt Peter again.

C H A P. III.

Of T I N.

TIN is a soft Metal, of a shining blue Colour, containing a Mercury something purer than other Ignoble Metals. It is more Soft and Volatile than Copper or Steel; more Fix'd than Lead, and more Crude than Silver. All its Preparations are accounted Specifick, for Diseases of the Liver and Matrix.

Purgation of Tin.

PUT what quantity of Tin you please in a little Pan of Iron; set it over the Fire, and when it begins to melt, put to it some Hog's Lard, Wax, or Honey, stir them about with a wooden, or Iron Spatula, and then cast them into hot Water; Repeat this two or three times, by which the Tin will be cleansed from some of its foul Sulphur, and made more bright and hard than it was before.

To Reduce Tin into a Powder.

MELT half a Pound in a Crucible, and pour it into a round wooden Box, cover it close, and shake it about till it is cold ; some part of it will be in a grey Powder, which put by; that Part which remains in Solid Metal, melt again, and put it in the Box, shaking it, as before. Repeat the same Operation, till you have as much of the Tin Pulveris'd, as you desire.

Amalgamation of Tin.

MELT what quantity of Tin you please in a Crucible ; put the same quantity of Mercury in another Crucible ; let the Mercury stand in the Fire, till it begins to Crackle and Fume ; then pour it out to the melted Tin, and stir them about with a small Iron Rod, till they are cold. If you wou'd have the *Amalgama* so hard as to beat into Powder, one Part of Mercury will be enough for two Parts of Tin ; but if you wou'd have it soft, you may put two Parts of Mercury to one Part of Tin.

Calcination of Tin.

PUT what quantity you please of Tin in an Iron Dripping-Pan, Place it in a Reverberating Oven, and make such a Fire, as to keep it melting red hot, every now and then stirring of it with an Iron Spatula, full of holes, the better to break the Tin, and forward its Calcination; this you may continue till you have a sufficient Quantity for your use.

Salt of Tin.

TAKE what quantity you please of the aforesaid Calcin'd Tin, and Reverberate it yet two or three Hours longer, stirring it all the time, 'till it becomes more white than it was in the First Calcination; then put it into a Pewter, or Glass Vessel, and to each Pound of the Calx of Tin, put ten Pound of Distill'd Vinegar; let them stand (now and then stirring them about) in a small Heat of Sand, till the Vinegar has acquired a sweet Taste; then Decant, and Filter the Liquor, and set it to Evaporate in a Pewter Bason, and when you see a Film appear upon the Surface of the Liquor, pour it into a Glass Funnel (the Hole of it being stopt with a Cork) and set

set it in a cold place to shoot into Salt ;
you may Evapourate and Chrystallize the
remaining Liquor after the same manner.

Sublimation of Tin.

MIX one part of Tin with two
Parts of clean Sal Armoniack ;
both being made into Fine Powder, and
well mix'd, put them into an Earthen
Cucurbit, which will endure the Fire ;
but above two Thirds must remain emp-
ty : Place it upon an Iron Bar, in an open
Furnace, which must be set nine or ten
Inches above the Grate ; and a third
part of the Cucurbit remain above the
top of the Furnace : Inclose the lower
part of the Cucurbit with Tiles and Lute,
leaving three or four Registers at an equal
Distance one from another, to give Air
to the Fire ; then fit to the Mouth of the
Cucurbit, two or three Aludels, and a
blind Head ; Lute them, and kindle the
Fire, and increase it gradually, till the
lower part of the Pot is red hot, in which
state keep it, till you perceive the Alu-
dels and Head cool ; then Un-lute the
Aludels carefully, without shaking, and
wipe off the Sublimate which adhere to
them, and also that which sticks to the
upper part of the Cucurbit.

The Magistry of Tin.

Dissolve the afore-said Sublimate in clean warm Water ; Filter the Dissolution, and precipitate it with Spirit of Sal Armoniack, or Ol. Tartar, *per deliquium* : The Precipitate will be very white, which must be wash'd with several Waters, till the Calx is insipid ; then dry it gently between Papers, and put it up for use.

It is a good Fucus, and us'd in Pomatums, or Washes.

Flowers of Tin.

Take one part of the Powder of Tin, and two parts of Salt Peter ; mix them very well ; then have ready an unglas'd Cucurbit, with a Hole in its middle, by which the Mixture must be Projected : let the Furnace be of a fit proportion, so that there may be two Inches clear between the Pot, and sides of the Furnace. Place it upon an Iron Bar, six or seven Inches distant from the Grate ; Fit it in with Tiles, and Lute, as you did in the Sublimation ; have also a Stople fitted to the Hole in the middle of the Pot. When the Pot is fitted into the Furnace, fit to it (and Lute the Joints well) three or four Aludels, and to the uppermost, a Head with a Beak, to which

a Re-

a Receiver must be fitted. Kindle the Fire, and when the bottom of the Pot is red hot, cast about half an Ounce of the Mixture into the Hole, which presently must be stopt; a Detonation will follow; when it is over, project another half Ounce, and so continue (still keeping up the Fire) till all the Mixture is in; then let all cool, and Un-lute the Vessels carefully, and wipe off the Flowers upon clean Paper; put them in a clean Vessel, and wash them with Fountain Water till they are tasteless; dry them gently between Paper; when dry, put them up in a Vial for use. They are very white, and serve for the same use with the former.

In the Receiver you will find a Nitrous Spirit; and in the bottom of the Pot, you will have a hard Lump, which is the grosser part of the Tin, and fix'd Nitre: By boiling, or steeping of it in warm Water, you will have the Water Impregnated with the Salt Peter, which you may Evapourate to Dryness, or cause it to dissolve *per deliquium*.

The Jovial Calx being wash'd sweet, and dried, serves to be used in Desiccative Unguents.

Some there are who pretend to order the Flowers, and fix'd Powder of Tin, so as to whiten Copper.

*The Gummy Smoaking Oil of
TIN.*

Take one part of Powder of Tin, and three parts of Mercury Sublimate, mix them quickly, and put them in a Retort; place it in Sand, and Lute a large Receiver to it; give it a gentle Fire, which will bring over a Smoaking Spirit, when those Fumes decrease: augment the Fire a little, and a Butter, or Gum will ascend into the Neck of the Retort; at last let the Fire be increased two or three Hours, to the fourth Degree, and Crude Mercury will ascend, with a good part of the Tin, in gray Flowers; separate the Mercury, and put all the rest of that which is Sublimed, in a Tin Pan, to dissolve in the Air, into an Oil, *per deliquium*.

Aurum Mosaicum.

Take of $\frac{g}{4}$, $\frac{v}{4}$, $\frac{*}{4}$, and Flowers of Sulphur, *ana* four Ounces; Let them all be made clean, and grind them in a Marble Mortar, till they are perfectly mix'd: Then put them into a Bolt Head, set it in a Sand Furnace; give it gradual Fire, to the third degree; in which keep it two Hours; then increase the Fire to the fourth Degree, and keep

it so one Hour longer: When all is cold, break the Glasf; you will find a dirty Sublimate, which put away, and the *Aurum Mosaicum* will remain in the bottom of the Matrass. You must Amalgamate the Tin and Mercury to grind with the Sulphur and Sal Armoniack.

Its *Operation* is Diaphoretick; and is Administred against *Hypochondriack* Distempers, *Fits of the Mother*, and the *Venerial Pox*.

Its *Dose* from ten Grains, to half a Drachm.

Observations.

IT is poured into hot Water, the better to separate the Fat from it, which you mix with it in its Purification.

The Amalgama of Tin and Mercury ought to be wash'd in several Waters warmed, to take away its blacknes.

If you design to make Salt of the Calcin'd Tin, you must put it in an Iron flat Pan, and Reverberate it two or three Hours longer, till it inclines to a whitish gray Colour.

In its Sublimation you ought to take care that the Sal Armoniack be clean, otherways some Particles of Dirt, which has

has accidentally adher'd to the Sal Armoniack, may discolour the Flowers.

*Precipita-
tion.*

In the Precipitation of its Magistry, you may use Spirit of Sal Armoniack, or Ol. Tart. *per deliquium*, indifferently; for they both being Alkalies, weaken the Acid Spirit of Sal Armoniack, so that it lets fall the Tin which was Dissolved by it.

*Sublima-
tion.*

In the Sublimation of its Flowers I have sometimes us'd one Part and a half of Salt Peter, to one Part of Tin, and sometimes three Parts of Nitre, to one of Tin; but I find by Experience, two Parts of Nitre, to one Part of Tin, to be the best Proportion; for if there be too much Nitre, there wants Sulphur to give Flagration, to raise the Flowers; and if there be too little Nitre, there will not be of the Nitrous Spirit sufficient to raise them. Also Note, That where the Powder of Tin is to be used, it is indiferent whether it be that made by shaking in a Box, or a hard Amalgamation beaten to Powder, or fine Filings of Tin.

*Smoaking
Spirit.*

In your Mixture of Tin, and Mercury Sublimate, for the Smoaking Spirit, you must immediately put them into the Retort, otherways they will attract Air, and grow clammy, and be troublesome to put in.

Its Stench is very Offensive, but not *Aurum Pernicious*; To avoid the Offence, set it *Mesalicum*. to work in a Chimney: The Degrees of Fire is the greatest Secret in the making this Medicine, which observe thus; Keep it in the First Degree one Hour; in the Second Degree two Hours; in the Third Degree Two Hours; and in the Fourth Degree one Hour.

There is also a Magistery of Tin, made by dissolving it in Aqua Regis; Pour four Ounces of the Dissolution, into half a Pound of clean Water, it will immediately turn white; Let it be in a Vessel which will contain three or four Pints; Then put to it (gradually) so much Spirit of Sal Armoniack, till the Ebullition ceases; a white curdly Matter will Precipitate; wash that Precipitate with clean Water, till all its Acrimony is gone, and dry it gently; This Magistery will more readily dissolve in Distill'd Vinegar, and make a better Salt of Tin, than that Calx made by Calcination.

The Aqua Regis is made of three Parts Spirit of Nitre, and one Part of Sublimed Sal Armoniack.

C H A P. IV.

Of Lead, or Saturn.

LEAD, or *Saturn*, is a foul Metallick Body, and Imperfect, Composed of an Argent Vive impure, not Fixed, and Feculent, some-what white outwardly, but inwardly red, and of a Sulphur in part combustible; It wants Purity, Fixation, Colour, and Ignition, yielding to an Expert Physician Excellent Medicines.

Purification of Lead.

IT is Purify'd, by melting with Honey, Wax, or Fat, and pouring them into hot Water, in the same manner as you do Tin.

Calcination of Lead.

IT is Calcin'd in an Iron Pan, being kept red hot, and stirring with an Iron Spatula, after the same manner as you did Tin, till it comes into an Ash-colour'd Calx. This Ashy Calx being put to Reverberate three or four Hours longer,

longer, becomes Red, and is call'd *Red Lead*, or *Minium*. The *White Lead*, or *Ceruse*, is made of Plates of Lead, by the Steem of *Vinegar*, after this manner: They put into a Glas'd Earthen Pot Plates of Lead; so that they may lye hollow, either by hanging them upon a Wire, or otherways, and setting them in a Bed of *Horse-dung* (with a sufficient quantity of *Vinegar* in the Pot) for three Weeks, or a Month's time. When they are taken out, beat off what is *Calcin'd*, and put the rest into the Pots again with *New Vinegar*, and order them as before, till all is brought into *Ceruse*. *Lead* is also *Calcin'd* by *Spirit of Nitre*, *Aqua Fortis*, *Aqua Regis*, *Spirit of Salt*, or any other Corrosive.

Litharge is made by the *Refiners*, when they Refine great Quantities of *Silver*; that which is of a Pale Colour, they call *Litharge of Silver*, and that of Yellow or Red, *Litharge of Gold*.

Burnt Lead, or *Plumbum Ustum*, is made by mixing two Parts Lead, and one Part Sulphur (the Lead in Filing, and Sulphur in Powder) put in a Pot, and set in a Fire to burn, as long as any combustible Sulphur is left.

Sugar of Lead.

TAKE of Litharge, Red, or White Lead, what Quantity you please, Powder it, and put it into a Pewter, Glass or Earthen Vessel, and put to it eight times its weight of Distill'd Vinegar: An Ebullition will appear upon their Mixture: Stir them well about; then set them upon a digesting Furnace in Sand; Let them stand in Warmth three or four Days, two or three times in a Day stirring them well with a clear Stick, when the Vinegar will have acquir'd a Sweetness; Pour off the Impregnated Vinegar by gentle Inclination, and Filter it; then put it to Evapourate in a Pewter Basin, till a Film appears upon the Surface of the Liquor; Then put it in a Glass Funnel (the small End being stopt with a Cork) and set in a cool place to shoot; When it has stood twenty four Hours, pull out the Cork, and let the Liquor, which is not Coagulated, run from the Sugar of Lead.

This Liquor is called *Honey of Lead*, which you may make into Sugar, by Evapouration and Chrystallization, or keep to make the Balsam or Magistery, as followeth.

Drop Oil of Tartar, by Dissolution, into the Honey of Lead, and a white Powder will fall to the bottom; which Powder must be wash'd sweet, and kept for Use, which is the same of the Magi-
sty of Tin.

The Balsam, or Butter of Lead, is made by mixing the Honey of Lead with its equal weight of Salad Oil; Beat them well together, till they are united in the Consistancy of a Balsam.

It is used in Scalds and Burns.

*The Balsam of Lead, with Oil
of Turpentine.*

PUT what Quantity of Sugar of Lead you please, into a Matraſſ; Put upon it four times its weight of Oil of Turpentine: Let them ſtand in a gentle Heat of Digestion, Fourty Eight Hours, shaking them about three or four times a Day: In that time the Oil will be well tinged; Pour it off from what remains undiſſolved, by gentle Inclination; Put the Impregnated Oil of Turpentine into a Retort, and draw two Thirds off in a gentle Heat of Sand; that which remains in the Retort, is the Bal-

Balsam, which keep in a Vial well stopp'd, for Use.

It is accounted an Excellent Medicine for Healing and Sicatrizing Ulcers. It is also used with good Success in Cancers, they being touch'd with it once in twelve Hours.

The Burning Spirit of Lead.

MIX what Quantity of Sugar or Lead you please, with three times its weight of Fuller's Earth, Powder of Bricks, or Tobacco-Pipes clean burnt, and beaten to Powder; Put them into a coated Retort, of which one third must be empty; Place it in an open Furnace, fit a Receiver to it without Luting, and make a very gentle Fire under it, to draw off the Phlegm: When the Drops begin to Taste, Lute well the Joints of the Receiver, and increase the Fire a little, 'till whitish Clouds come into it, and as you find the Fumes to abate, increase the Fire to the most Extream Degree, till no more Fumes appear in the Receiver: Then take off the Receiver, and put all the Liquor into a clean Retort, or a Body with its Head placed in Sand. Lute the Joints well, and make under

under it a gentle Fire, which will drive over its ardent Spirit, in an imperceptible subtle Vapour; After that will rise a Liquor (a little ting'd) which some call *The Yellow Oil of Saturn*, and will appear in little oblique Veins: After that the Phlegm will rise in strait Veins, and in the bottom will remain that which is call'd *The Red Oil of Saturn*. These Substances ought to be Separated by Changing the Receiver in the Rectification.

The Burning Spirit is Diaphoretick, and is given in the *Plague*, *Burning Fevers*, *Small Pox*, and *Venerial Pox*, and in *Hypocondriack Melancholy*.

Its *Dose* is from ten, to twenty five, or thirty drops.

Observations.

THE Pouring it into hot Water, is ^{Purification.} to Separate the Fat from it.

It gains Weight by Calcination, because a greater quantity of Igneous Particles Insinuate themselves into the Lead, then the Sulphureous opes the Fire drive out. For in Calcination, the Acid of the Fire, joins it self to the Alkali of the Lead, and having driven away its combustible Sulphur, makes a new and incombustible Body.

White Lead also gains in its weight by the Acid Particles of Vinegar, and burnt Lead by those of Sulphur.

Salt.

Any of these Saturnine Calxes will make Salt; but I have found the *Flake-Lead*, as they beat it off the Corroded Flakes, to serve best. You may have it at the Colour-Mens for 6 d. per *lb.*

Pewter Vessels are best both to Evaporate and Digest the Distill'd Vinegar, and Lead in; Earthen Vessels suck up too much of the Liquor, and in Glass Vessels it requires more time, and is in danger of breaking. And, besides, its Evaporation in a Pewter Bason, makes it shoot better into Chrystals.

Burning
Spirit.

I mix Bole with the *Salt*, to keep it from melting; so it will the better emit its Spirit.

All Calxes of *Lead* may be reduced into Solid *Lead* again, by melting, with Charcole-Dust, and Nitre.

C H A P. V.

Of I R O N.

MARS, or *Iron*, is a foul, imperfect Metal, Generated of impure Mercury and Sulphur, full of Earth, and strongly United by the Nature of its Parts, but wanting Fusion and Weight. However, when it is well prepared, it yields many Excellent Medicines both for Internal and External Use.

*Preparations of Iron.**Dr. Willis his Preparation of Steel.*

Take clean Filings of Iron, and Cream of Tartar in Fine Powder, of each alike quantity ; mix them well, and make them into a Paste, with White-wine. Then set them to dry in the Sun, or other gentle Heat ; break it, and if it has not acquir'd a greenish Colour, Powder it, moisten, and dry it again, as before.

Another

Another opening Crocus with Sulphur.

A Nother opening *Crocus* is Prepared with Sulphur ; by mixing equal Parts of Filings of Steel, and Sulphur in Powder, and burning them in a flat-bottom'd Earthen, or Iron Pan, continually stirring them with a Spatula, till they come into a Subtle Powder, which will be black, and is *Steel Prepared with Sulphur*. This Prepared Steel being mix'd with more Sulphur, and Fir'd, as before, and continued in Agitation, will acquire a Saffron-Colour.

Its *Use* and *Dose*, as the former.

Crocus Martis Aperiens.

TAKE Filings of *Iron*, what quantity you please, moisten them with Rain-water, and dry them in the Sun, or at a gentle Fire ; when they are dry, moisten them again, and dry as before. Repeat this five or six times, and the Filings will be in a Subtle Powder, which is call'd the opening Saffron of *Mars*.

You may Expose Filings of Iron to the Air, where Dew may fall upon it, and dry it, as before ; this being repeated fourteen or fifteen times, the *Mars* will be

be converted into a Subtle Powder, which is call'd *Crocus Martis*.

Both these Powders are Opening, and given with good Success in the *Green Sickness*, *Stoppage of Terms*, and in *Dropsies*.

Its *Dose* from five Grains, to two Scruples, or fifty Grains.

An Aperitive Crocus, in the making of Ens Martis.

Take the *C. ap. Mort.* of *Ens Martis*, Put it into a large Crucible; Set it in a Melting-Furnace, with a good Fire about it; Keep stirring till it has done Fuming.

Any of the aforesaid *Crocuses*, after being sprinkled with Vinegar, and being Reverberated three or four Hours, are accounted Binding, and are given in *Diarrhaea's*, *Spitting of Blood*, *Immoderate Hemorrhoids*, and *Terms*.

The *Dose* from fifteen Grains, to fifty or sixty Grains.

Crocus

Crocus Martis Astringens.

IT is made by Reverberating Filings of Iron, in the Flame of a Wood Fire, for sixteen or twenty Hours. Some advise to stir it once in two or three Hours; but this is troublesome, and after all, it is no better than those which went before, and useful generally for the same Purposes.

Salt, or Vitriol of Steel.

TAKE four Ounces of *Iron*, and sprinkle upon, or moisten them with two Ounces of Oil of Vitriol: Put them into a Matras, and let them stand a quarter of an Hour: Then put to them twelve Ounces of Fountain-water by degrees. When all is in, set them in a gentle Heat, to stand twenty four Hours. Then decant, and filter the Liquor, which must be Evaporated in an Earthen or Glass Vessel, till you see a Scum appear: Then take it from the Fire, and if you see any yellow Powder in the bottom of the Vessel, decant the clear Liquor from it, into a wide-mouth'd Glass, and set it in a cool place, where it may stand

stand twenty four Hours, to shoot into Chrystals: Then pour the Liquor from the Chrystals, to be further Evaporated; and so on, till it all shoots into Chrystals.

It is used in all Diseases caused by Obstructions.

Its *Dose*, from five to twenty Grains.

Salt of Steel, by the Sweet Spirit of Vitriol.

Take a Flat Iron Pan, turn'd up at the Edges, and put into it so much *Spiritus Vitrioli Dulcis*, as will fill it two Fingers; let it stand quietly in some warm place, till it is Coagulated into a *Salt*; then dry it gently, and keep it in a Vial, well stopt.

Its *Use* and *Dose* is the same with the former.

Eps Martis.

Take Filings of *Steel* one Pound, *Sal Armoniack* in Powder two Pound, mix them well, and put them into a Retort, which set in a Sand Furnace, and give

give gradual Fire to the Fourth Degree: when all is Sublimed, let out the Fire, and you will have in the Neck of the Retort, the Sal Armoniack Impregnated with the Sulphur of Steel.

Its *Operation* is Diuretick, and a little Diaphoretick.

It is accounted a Specifick against the *Rickets* and *Worms* in Children; also against *Hysterick Fits*, and a great Opener of *Obstructions*.

Its *Dose* from five Grains to one Scrup.

Diaphoretick Steel.

Dissolve the *Ens Martis* in a sufficient quantity of warm Water; Filter the Dissolution, and by dropping leisurely the Oil of Tartar, *per deliquium* (or Spirit of Sal Armoniack) into the Filtered Liquor, a Powder will Precipitate; Let it settle, and decant the Liquor, and dry the Precipitate.

Its *Operation* is Diaphoretick, and Diuretick, and is given to *Hypochondriacal* Persons, also in *Quartan Agues*.

Its *Dose* from Ten to Thirty Grains.

The

The Tincture of Steel.

Take that which remains in the bottom of the Retort, after the Sublimation of *Ens Martis*, Powder it whilst warm, in a warm Mortar, put it presently into a Matras, with so much Spirit of Wine, as will cover it four Fingers high; Let it stand five or six Hours in warm Sand, and it will be tinged of a red Colour. When it is cold, decant it from the Feces, and put it in a Glas well stopt, for Use.

This *Tincture* is said to be a Specifick against *Worms* in Children, *Cachexia* and *Dropsey*.

Its *Operation* is Diaphoretick and Diuretick.

Its *Dose* from five to fifty Drops.

That which remains, after the *Tincture* is Extracted, may be Reverberated a little; and it is one of the best opening Saffrons of Steel. But the continuance of its Reverberation three or four Hours, makes it Astringent, as 'tis commonly so call'd.

Another

Another Tincture of Steel, and its Sweet Salt.

TAKE half a Pound of Filings, without Dust, put to it one Pound and a half of Spirit of Salt: Let it stand upon warm Sand twenty four Hours; then decant and filter the Liquor: Put to the remaining Steel, one Pound and a half more of Spirit of Salt: Let it stand, as before, twenty four Hours; shake it two or three times a Day, and in that time the Steel will be almost all dissolved; Decant and Filter, as before; Put both the Filter'd Liquors into a Retort, which place in Sand, and draw off two Pound of the Liquor; then let the Retort cool, as soon as you can, but before 'tis quite cold, pour the Liquor from the Sediment, into a Glafs, and set it to shoo in a cold place.

These Crystals will have a sweetish Taste, and by three or four Dissolutions and Coagulations in the same Liquor, they will acquire a sensible Sweetness.

This is accounted the best Salt of Steel, and more successfully Answers the Intentions of all the rest, and is more Pleasant for the Patient to take.

Its Dose is the same with the other Salts.

The Tincture of Mars.

TO make this *Tincture* you must draw the first Distillation to dryness, or till such time the Drops which Distil from it appear yellow; then, to that which remains, put a Quart of Distill'd Vinegar; and let it stand twenty four Hours in warm Sand; in that time it will tinge: Then take off, and Decant that Red Tincture, and put upon it more Distill'd Vinegar; let it stand as before, and so proceed till it yields no more *Tincture*; Distil off the Vinegar, to the Consistency of a Syrup, and put to it so much Spirit of Wine, as will cover it Four Fingers; set it in warm Sand twenty four Hours, and it will be Tinged; Decant that tinged Spirit, and proceed, as long as it will give any further Tincture.

When you have done, take all the tinged Spirits of Wine, and put them into a Cucurbit, set it in a Heat of Ashes, and draw off all the Spirit of Wine, except sixteen or twenty Ounces, which will be a deep and clear Tincture. Put this, when cold, into a Vial, well stopt.

This far exceeds the other Tinctures, and is used in the same Cases and Dose.

The Tincture of Steel, with Tartar.

TAKE half a Pound of Rust of *Iron*, mix with it twenty Ounces of Cream of Tartar in fine Powder. Put them into an Iron Kettle, with eight or ten Pints of clean Water; set them over a Fire; cause them to Boil for eight or ten Hours, and stir them often, still supplying hot Water, as it Evaporates. Then let the Mixture settle, and whilst warm, filter it, and Evaporate to the Consistence of a thin Syrup, in an Earthen Pan.

It is a good Aperative Medicine, and given in the same Cases the others are.

Its Dose from one Scruple to five, in any proper Vehicle.

The Anodine Sulphur of Steel.

TAKE of the aforesaid Tincture Extracted, with Distill'd Vinegar, and drop upon it, either Spirit of Sal Armoniack, or Ol. Tart. *per deliquium*, so long till you see nothing will Precipitate; then let it stand to settle, and Decant the Liquor, which is of no use: Pour

Pour warm Water upon this Precipitate, and when settled, shake it; Decant that Water, and put on more, and so proceed, till the Sulphur has no salt Taste; then dry it gently, and keep in a Vial, well stopp'd, for use.

Its *Operation* is Suderifick and Anodine, and is successfully used in the *Gout*, *Rheumatism*, *Scurvy*, all *Fevers*, and the *Small Pox*.

Its *Dose* is from ten Grains to half a Drachm, or one Drachm, in any proper Extract, or Conserve.

The Opening Extract of Steel.

Take any of the aforesaid Opening Crocus's, four Ounces, of the Juice of Apples (ordered as followeth) four Pound, put them in an Iron Pan, in a gentle Heat of Digestion in Sand, sixty or seventy Hours; Augment the Heat in such manner, that it may boil very gently, three or four Hours; Stir it every quarter of an Hour with an Iron Slice, and when you perceive it to be black, take it from the Fire, and let it stand to settle a little; whilst warm, pour it through a straining Cloth, and

E 2 by

by gentle Evaporation bring it to the Consistence of an Extract.

It is endued with the same Vertues other Opening Chalybeats are.

Its *Dose* is from half a Scruple, to two, or one Drachm.

You must put half a Pound of Tame-rinds bruised, to four Pound of the Juice of Apples, and mix them well in an Iron Mortar: Let them stand twenty four Hours, in a gentle Heat of Sand, then strain it through a Cloth for the use abovesaid.

The Binding Extract of Steel.

Take of the binding *Crocus Martis*, four Ounces; Put to it of Red Port Wine (wherein half a Pound of the Pulp of Ripe Sloes has been mix'd and digested, as in the Opening Extract) four Pound: Proceed in every thing as in the other Extract, and you have that which they call the *Binding Extract of Steel*.

It is given in *Bloody Fluxes*, *Loosings*, and *Immoderate Courses*.

The *Dose* the same with the former Extract.

Obser.

Observations.

Some Authors are of Opinion that *choice of Steel* is the better Subject to Work *Mars.* upon, and Others give the Preference to *Iron*; But I think 'tis Indifferent which we take, since *Steel* is no other than a Concentrated *Iron*; I have us'd them both very often, and never found any Difference, either in their Preparation, or Operation, only *Steel* (by Reason of its Concentration) requires a little more time for its Dissolution.

Always wash the *File-dust* in several *to clean* Waters, to separate the Dirt, which has *the Mars.* accidentally fallen into it; the Dirt will swim upon the Surface of the Water, and the clean Filings will sink to the bottom; they are best dried in the Sun.

Rain-water and Dew are accounted *Aperative* better than common Water, to moisten *Crocus.* the Filings with, because they are Impregnated with the Nitre of the Air, which causes a better Penetration, and is more Aperative.

In the Preparation of *Mars* with Sulphur, place the Vessel in a Chimney, the *Steel* ^{pared with} *better* _{Sulphur.}

better to avoid those Offensive Fumes it emits.

Dr. Willis This Operation requires nothing but *his Prepar.* diligent Grinding, if there be occasion to moisten it a second time.

Salt of Steel.

Let the Dissolution of *Mars* for its Salt be always made in a Chimney, for the better Convenience of the unpleasant Sulphureous Fumes which rise from it; nor fill the Vessel in which you dissolve it, above a quarter full, lest it should boil over.

Salt of Mars, with sweet Spirit of Vitriol. Some Prepare this Salt with equal Parts of Oil of Vitriol, and Spirit of Wine, but the Spirit of Vitriol dulcify'd, produces a finer Salt.

Ens Mart. Of Sal Armoniack we take two Parts to one Part of *Mars*, the better to Penetrate the Filings, and make a Separation of its Volatile Sulphur.

Diaphoret. Steel.

In this Precipitation of *Mars*, the Diaphoretick and Diuretick Operation proceeds from the Particles of Sal Armoniack, which are mix'd with it. Therefore we do not wash this, as we do other Precipitates.

Tincture of Mars.

This Tincture is also Impregnated with the Sal Armoniack, which makes it operate by Urine.

In this Preparation some use Crude *Tincture of Mars*, with Tartar, but I rather choose Cream of *Tartar*. Tartar, because its grosser, and more Earthy Parts are separated from it, and therefore it makes the better Penetration into the Iron.

Some there are who make a Distinction *Sweet Salt of Mars* of the Parts of Iron, affirming that the purer part of it dissolves first, and most easily in an Acid; but I have often try'd that Experiment, and could never find any sensible Difference. Most Corrosives are capable of dissolving the whole Body of *Mars*, but the Spirit of Salt more kindly and readily than any other.

This Tincture is thought to be more Penetrating and Noble, than the Fore-going ones, because the *Mars* is Purify'd by three Dissolutions, (viz.) with Spirit of Salt, Distill'd Vinegar, Spirit of Wine, and in each Dissolution it leaves new Fees.

The Tincture of Steel, made with Salt, Distill'd Vinegar, and Spirit of Wine.

This is call'd, *The Anodine Sulphur of Mars*, because it gives Ease, by quieting the *Archaeus*.

This Extract must be made with the Juice of such Apples as have an Acidity, which must be Augmented by that of the Tamerinds, the better to dissolve the Saline Soluble Salt of the Steel.

*The bind-
ing Ex-
tract.*

The deepest Red Wine you can get is best for this Preparation: The Astringent Quality of the Sloes do much increase the Vertue of this Medicine.

Notwithstanding all those Preparations which are commonly called *Aperitive*, there are some who will not allow any Preparation of *Mars* to be truly such; but that meeting with their proper Acid, in great quantity, as in Diseases of the *Liver* and *Spleen*, they become Opening and sometimes violently Purging.

C H A P.

CHAP. VI.

Of COPPER.

VENVS, or *Copper*, is a Metalline Body, Foul, Imperfect, and Generated of an Impure *Mercury*; Its Sulphur is Earthy, Combustible, and of an obscure Red; it wants Fixation, Purity, and Weight; but if handled by an Expert Artist, is of great use both for Internal and External Mecidines.

Purification of Copper.

TAKE Plates of *Copper*, of the thickness of a Shilling, lay them *stratum super stratum*, with Powder of Sulphur, in a large Crucible; let the first and last Lays be Sulphur; Put them in the Arch of a Glass-maker's Furnace twelve Hours; Then take them out, and when they are cold, scrape off what is Calcin'd: The rest of the Plates, which the Sulphur has not Penetrated, may be again stratify'd and calcin'd, as before: This *Calcin'd Copper* is called *Æs ustum*.

If you wou'd reduce it into *Copper* again, take the *Æs ustum*, and heat it red hot in a Crucible, and cast it into an Earthen Pan, wherein *Linseed-Oil* is; cover it presently, to hinder it from Flaming; Let it lye in the Oil till it is pretty cool; Then take it out, and heat it red hot, and quench it as before: Do this nine or ten times, every third time putting new Oil: Then take the *Copper*, which looks very fine, and with *Charcole-Dust*, and *Borax*, put it into a Crucible; set it in a Melting Furnace; give it a strong Fire of Fusion, till it is well melted, and cast it into an Ingot.

Another Purification of Copper.

STratifie Plates of *Copper* with Common Salt, in a Crucible, Calcine it in a Glafs-house-fire, as you did the other; scrape all that is Calcin'd; and the remaining Plates stratifie and calcine, as before; Then mix this Calcin'd *Copper* with *Charcole-Dust*, and *Borax*, put it in a Crucible, and with a very strong Fire, in a Melting Furnace, reduce it into a Body, which you may either let cool in the Crucible, or cast into an Ingot that is heated and greas'd.

Cry-

Crystals, or Vitriol of Copper.

Dissolve the aforesaid *Copper* in *Aqua Fertis*, or *Spirit of Nitre*: To one Part of *Copper*, you must put three Parts of *Spirit of Nitre*, by little at a time: Put the Dissolution upon warm Sand, and Evaporate one half; Set that which remains in the *Cucurbit*, in a cold place to shoot into Crystals; the Liquor which remains may be Evaporated as the former, and again set to shoot: Dry the Crystals between Paper, and put them in a Vial stopt from the Air.

They are a good Caustick to consume proud Flesh.

Other Crystals of Copper, or Verdigreeze.

Take of *Verdigreeze* in Powder one Pound, put it into a Matraff, with four Pound of *Distill'd Vinegar*: Set them upon warm Sand, the space of three or four Days, stirring them about three or four times every Day; When 'tis

'tis well settled, pour off the blew Li-
quor by Inclination, and put new Di-
still'd Vinegar to that which remains un-
dissolved, and keep it in the Heat again
two or three Days, stirring it about, as
before, and if the Second Extraction be
as blue as the First, pour it off by Incl-
ination, and put two Pound more of Di-
still'd Vinegar upon that which remains
in the Cucurbit, using the same Method
as before. This Third Extraction will
take all that is dissolvable. This done,
put all the Impregnated Waters together,
and Filter them; Put them in a clean
Cucurbit, and Evaporate one half of the
Liquor; then take it from the Fire, and
before it is quite cold, Decant it into a
clean Vessel, from the Feces (which some-
times fall in the Evaporation) and set it
in a cold place, where it may stand four-
ty eight Hours, to shoot into Crystals;
Pour the remaining Liquor from the Cry-
stals, and Evaporate again, and shoot
into Crystals, as you did before.

This is call'd *Distill'd Verdigreefe*, and
is more us'd by *Painters* than it is by *Phys-
icians*; It is very deterersive, and is some-
times us'd Externally.

Spirit of Verdigreeſe.

Take the Chrystals of *Verdigreeſe*, with which fill a Retort half full; Place it in Sand, giving a gentle Fire till the Flegm is Distilled. Asſoon as you perceive the Drops to be Acid, change the Receiver, and Lute it well with Bladder; then increase the Fire, and the Receiver will fill with white Fumes: When you perceive those Fumes to de-crease, Augment the Fire, and at laſt lay kindled Coals round the Neck of the Retort, and keep up the Fire to the highest Degree, till the Fumes ceaſe, and the Receiver grows cool: Then take off the Receiver, and put the Spirit into a clean Retort, and Rectifie it in a gen-tle Heat of Sand: Put it out of the Re-cipient into a Bottle, and stop it close.

It is accounted a good Medicine in the *Palsie*, *Epilepsie*, and *Apoplexy*; And is also a good Menſtruum to Diſſolve Pearl and Coral.

The *Dofe* is from five, to twenty five, or thirty Drops, in a convenient Vehi-cle.

The

The Crocus of Copper.

LET the Cap. Mort. of the Spirit of Verdigree be beaten to fine Powder, and in an Unglas'd Pot Reverberated for ten or twelve Hours, often stirring it with an Iron Rod; Then wash off the most Subtle Powder from the Gross; Dry it, and put it up for use.

Its *Operation* is Diaphoretick and Diuretick. It stops Bleeding, both Internal and External: It is *Anodine*, and successfully used in *Gonorrhœa's*, by Injection: It is also good against *Loofness* of the *Belly*, and *Dysenteries*.

Its *Dose* is from five, to twenty Grains.

The Tincture of Copper.

TAKE the Reverberated *Crocus*, before it is wash'd, four Ounces; Put it in a Matras, with Spirit of Salt twelve Ounces; Set it upon warm Sand to Digest, Forty Eight Hours, (shaking it about three or four times a Day) in which time the Spirit will receive a Red Tincture; decant the Tincture; Put upon the *Copper* half a Pound of new Spirit of Salt; digest, and shake it, as before;

fore; Put the Tinged Spirit into a clean Retort, and draw to a dry bottom in the Second Degree of Sand-Heat; To that which remains in the bottom, put Distill'd Vinegar, twelve Ounces; Digest, and Agitate, as in the former Digestion, you will have a Red Tincture, which pour off by gentle Inclination; Put to that which remains, half a Pound more of Distill'd Vinegar, and Digest, as before; Then put the Tinctures together, and Filter them; Put the Filter'd Liquor into a clean Cucurbit, with its Head and Receiver; set it in Sand, and in the Second Degree of Fire, let it be drawn to the Consistence of Honey; Then put to it twelve Ounces of Tartaris'd Spirit of Wine; Let this Digestion be made in a Circulatory, or double Vessel, well Luted; give it Fourty Eight Hours Digestion, with the same Agitation as formerly; Decant the Tinged Spirit of Wine, and put on more; and so do 'till it will Extract no more Tincture: Put all the Tinged Spirits into a clean Cucurbit, and in a gentle Heat of Sand, draw all off to about eight Ounces, which put into a Vial, well stopp'd, for Use.

Its *Operation* is Diaphoretick: It is given in all Diseases of the Head, in Fevers, Small Pox, and the *Veneral Pox*.

Its *Dose* is from ten to fifteen Drops.

Obser-

Observations.

ALL the Fæces from which you have drawn the former Tinctures, you may save, and Reduce them into a very fine Powder, in a strong Fire, with Charcole-Dust, Nitre, and Borax.

Purification.

Such Salt, or Sulphur, as you shall find to lye loose between the Cemented Plates, after you take them from the Fire, you may keep a part, and only scrape off such as stick to the Plates.

Dissolution

Dissolve the Copper, and Evaporate the Dissolution, always in a Chimney, to avoid the obnoxious Fumes.

Spirit of Copper.

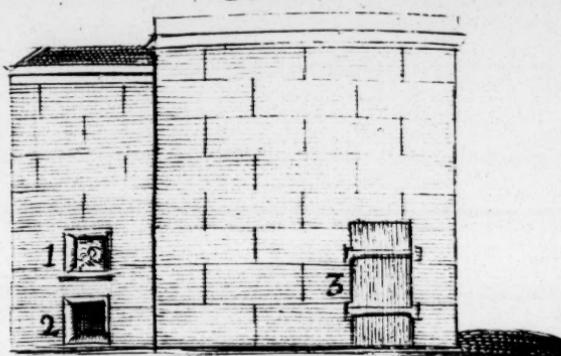
To make the Spirit of Verdigree, always choose the Crystals. For Crude Verdigree being mixt with some parts of the Grapes (with which it is Corroded) sends forth an Oiliness, from which the Spirit is not easily Separated by Rectification.

Crocus of Copper.

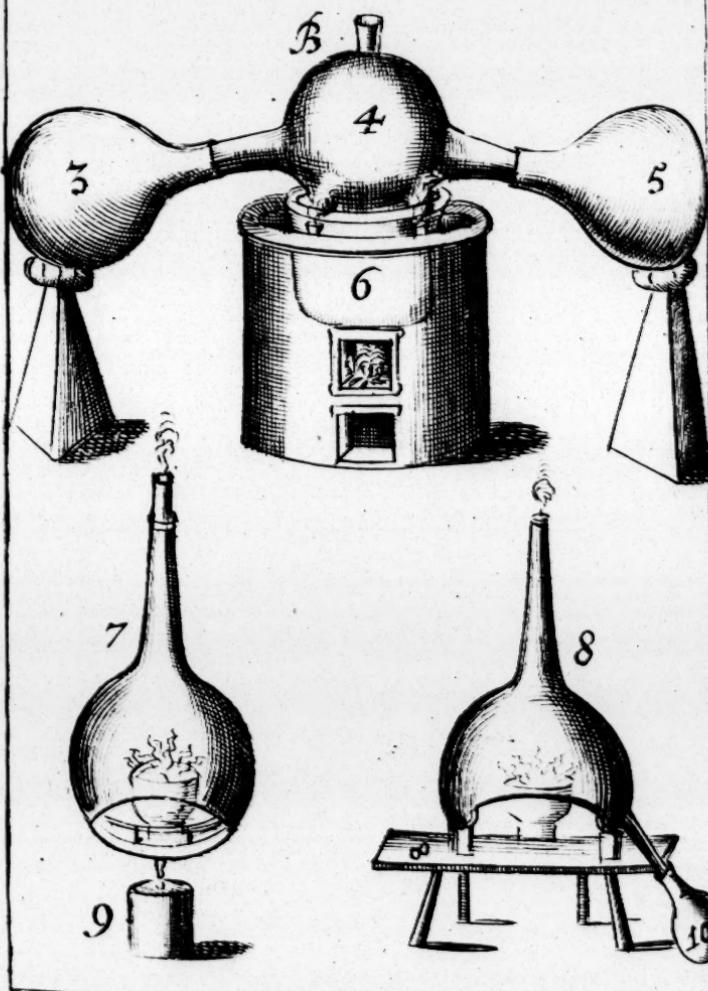
Sometimes the Reverberation of the Crocus is as well Performed in five or six Hours, as it is in twelve Hours, according to their Diligence in keeping up the Fire, and stirring the Matter.

CHAP.

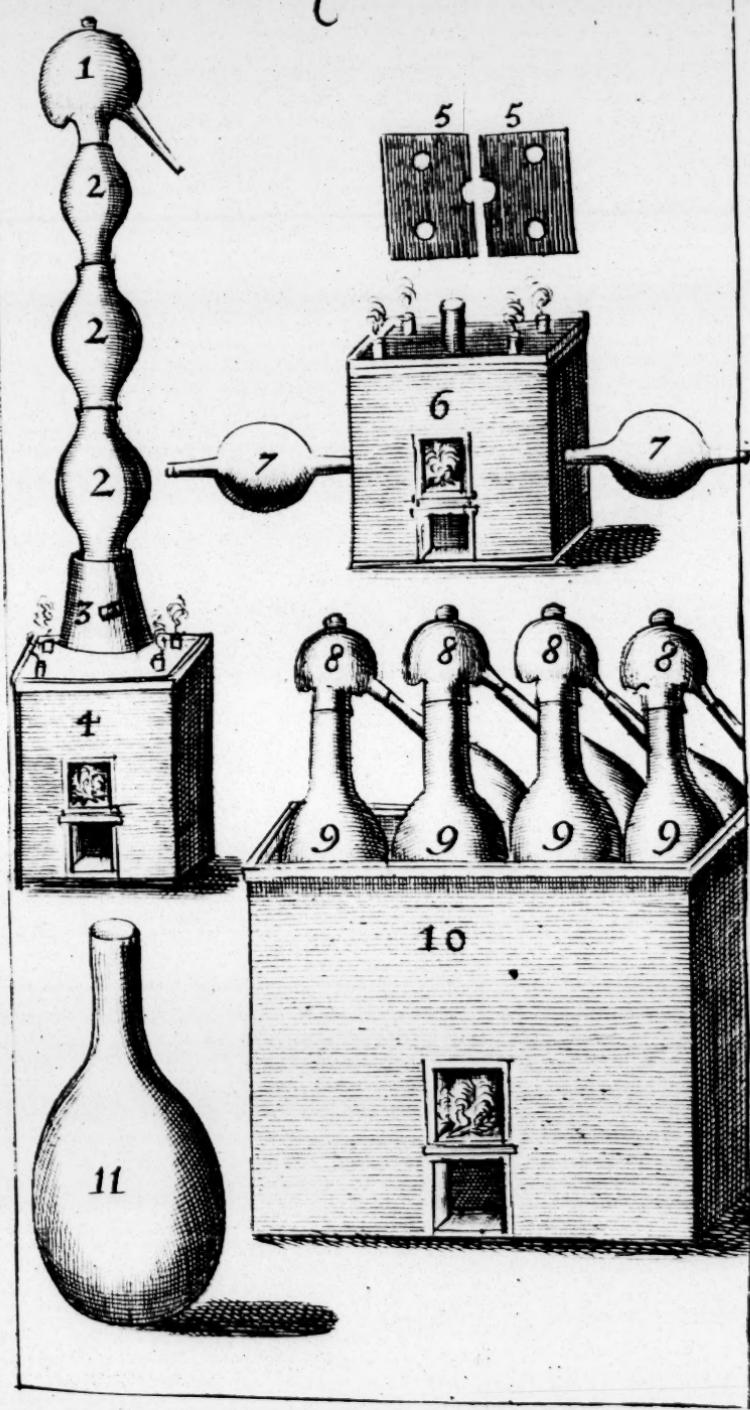
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The Explanation of the Figures.

A The great Furnace, in which the Flower of Brimstone is Sublimed in great quantity.

1 The Fire-Place.

2 The Ash-Hole.

3 The Door into the Body of the Furnace, by which the Flowers are taken out.

B The little Furnace in which Flower of Sulphur is Sublim'd in small quantity.

4 The Head, made of Earth or Iron.

5 5 The two Ballons, or Receivers.

6 The Vessel which contains the Sulphur in the Furnace.

7 The plain Bell-Gliss.

8 The Bell with a Verge and Beak.

9 The Receiver to the plain Bell.

10 The Receiver to the verged Bell.

C The second Plate of Subliming Furnaces.

1 The Head of the Aludels.

2 2 2 The three Aludels.

3 The Body, in which the Matter that is to be Sublimed, is projected into.

4 The Body of the Furnace.

5 5 The Covers of the Top of the other Subliming Furnace.

6 The Body of the other Subliming Furnace.

7 7 The Aludels, to which more Receivers may be adapted.

8 8 8 The Heads of the Vessels wherein the Mercury Sublimate is made in great quantity.

9 9 9 The Subliming Vessels set in the Furnace.

10 The Body of the Furnace.

11 The Subliming Vessel out of the Furnace.

C H A P. VII.

Of M E R C V R Y.

Mercury is no other than a Mineral, or Metallick Water, or Liquor, agreeable to all Metals, as their Mother, but more closely adhering to Gold, than to any other, by reason of its Purity; and Philosophically opened, yields the True Metalline Menstruum, &c.

It is sometimes to be found running in the Veins of the Earth, in the perfect Form of Quick-silver; but much the greater quantity of it is drawn from a Mineral Stone Call'd *Natural Cinnaber*: The Vivification of it into running *Mercury*, I shall give in one of the following Processes.

Purification of Mercury.

It is Separated from such Dirt as has accidentally fallen into it, by forcing it through a clean Cloth, or Leather: It is better cleansed by grinding it with Salt and Vinegar, and washing it with

F

warm

warm Water, and continuing so to do, till it blackens not the Salt or Water: But there is yet a better way of Purifying it, by putting what quantity of it you please into a Retort, with equal its weight of Salt of Tartar, and the same weight of Calx Vive upon it; Place it in a Sand Furnace, and give a gradual Fire, till it is Distill'd into the Receiver. Some fill the Receiver half full of Water, but this gives an unnecessary trouble, because the *Mercury* comes not over in Fumes, but drops out of the Neck of the Retort into the Receiver. If you repeat this three or four times, it makes the *Mercury* extream bright and pleasing to the Eye, and frees it from all its foul External Sulphur. It is also well Purify'd by Vivifying it from Sublimate, Cinnaber, or an Amalgama of Gold or Silver.

Artificial Cinnaber.

TAKE of Sulphur one Pound, melt it in an Earthen-Pan; then put to it by little at a time, three Pound of Crude *Mercury*, stirring them till no *Mercury* appears; then let them cool; Powder the Mixture, and them into an Oval Bolt-head Luted; Place it over a naked Fire, which

which increase gradually, to the Fourth Degree, and the Cinnaber will be Separated in a Cake above the Fæces.

The Vivification of Cinnaber.

TAKE of Cinnaber one Pound, Calcin'd Tartar, or Pot-ashes, one Pound, Calx Vive two Pound; Grind them well together, and put them into a Retort, leaving at least one Part of Three empty. Place it in a Reverberatory Furnace, and fit a Receiver; Let it stand twelve Hours, and then kindle the Fire, increasing it gradually to the fourth Degree; Keep it so till the *Mercury* is rais'd into the Neck of the Retort and Receiver, which will be in Seven or Eight Hours time.

Then put all the *Mercury* into a clean Diaper Napkin, placed over a clean Earthen Dish, and squeeze it through to separate from it any Heterogeneous Matter, that may have ascended in the Distillation.

It is also Revived by mixing Cinnaber, one Pound, with one Pound and a half of Filings of Iron, and Distilling as before.

The Corrosive Sublimate of Mercury.

TAKE of *Quicksilver* seventy Pound, of *Corrosive Sublimate* five Pound, of *Common Salt*, and *Nitre*, of each fifty Pound, of *Rubify'd Vitriol*, one hundred Pound ; of *Caput Mortuum* of *Aqua Fortis* twelve Pound and an half. The *Mercury Sublimate*, *Common Salt*, *Nitre*, *Caput Mortuum*, and *Rubify'd Vitriol*, made into Fine Powder, and kept each by themselves, are to be mix'd as followeth. The *Quicksilver* and *Sublimate* must first be mix'd with about a quarter part of the *Salts*, in a convenient Vessel, by Agitation. This Mixture will grow moist, and part of the *Quicksilver* will Incorporate with the *Salts*. Proceed putting in the *Salts* (by a quarter part at a time) till all is in, continually stirring, till no part of the *Quicksilver* appear in a running Form : Then put to it the *Caput Mortuum*, which will a little thicken it. When these Ingredients are equally and well mixt, they will become pretty dry, and then you may Agitate them through a Sieve ; And last of all, mix the sifted Powder, and *Rubify'd Vitriol*. Put this Mixture in equal Proportions, into Four Subliming Glasses ; the Figure of which, with the Furnace, you will see in the beginning of this Treatise.

tise. Place them in Ashes; fit Heads and Receivers to them, and give a gentle Fire for twenty four Hours; in which time the *Mercury* will be dissolved, and an *Aqua Fortis* will Distil into the Receivers. After that increase the Fire, and keep it in continually, till you perceive the Sublimate to rise in the Vessel above the Ashes, separated from the *Caput Mortuum*, in form of a Cake, which commonly happens about the Fourth or Fifth Day. When all is cool, carefully remove the Glasses from the Ashes, and take out the Cake of Sublimate, which keep for use.

Mercurius Dulcis.

Take of Corrosive Sublimate, one Pound, to which add of Purify'd *Quicksilver* twelve Ounces; Grind them well together in a Stone Mortar, with a Glass or Wooden Pestle, till no *Quicksilver* appear. Then fill one third Part of a Bolt-Head with the Mixture; set it in a Sand Furnace; let the Sand lye half an Inch thick betwixt the bottom of the Bolt-Head, and the Kettle, filling it up with Sand, within an Inch of the Neck; Stop the Mouth of the Glass with a little Paper, or Cotton-wool; Then give Fire

of the First Degree two Hours, increase it to the Second, in which keep it three Hours; go on to the Third Degree, three Hours more, and in that time the Sublimation will be performed. Take it out, when cold, and wipe the Sand and Dirt from the Bolt-head; break the Glass over a clean Sheet of Paper, and separate the Sublimate from the light Flowers at the top, and the Dust which lies in the bottom. Afterwards Powder this grossly, and Repeat the Sublimation the Second and Third time. If you Sublime it six or twelve times, it is called *Calomelanos*.

Its *Operation* is Cathartick, and is given to kill *Worms*, and in all *Venerial Cases*.

Its *Dose* is from five Grains to two Scruples.

Red Precipitate of Mercury.

TAKE *Crude Mercury* one Pound, of *Aqua Fortis* made as followeth, two Pound; Let them stand in the Heat of Ashes, that the *Aqua Fortis* may simmer till the Flowers begin to appear. Then increase the Fire, till the Flowers rise red about the middle of the Glass, and proceed with the Fire to the highest Degree, for

for the space of three Hours. After which, let all cool, and take out the Precipitate.

It is never given inwardly, without Correction. It eats Proud Flesh, and is used for the laying open of Shankers.

The *Aqua Fortis* for this use is to be made of Allum and Nitre, of each two Pound, and of Vitriol one Pound, and Distill'd as other *Aqua Fortis*.

The Red Panacea of Mercury.

Take what quantity you please of *Red Precipitate*; Put it into a Cucurbit, and afterwards, eight times its quantity of Spring-water: Let it stand in a Heat of Sand twenty four Hours, shaking it three or four times; Pour off the Water, and keep it for Use. Then dry the Precipitate, and put to it eight times its weight of Spirit of Wine; Fit a Glass to the Mouth of the Cucurbit; Lute it well; and set it in a gentle Heat. Let it continue there fifteen Days; shake it often, and after it is cool, pour off the Spirit of Wine by Decantation. Then take the *Precipitate*, and put it in a *China-Dish*, with twice its weight of Tincture of Sulphur; set it on the Fire,

F 4 and

and burn off the Tincture ; and then put on fresh Spirit of Wine ; Let it simper two or three Hours, and after it is set. led, Decant, dry the Precipitate, and put it up for use.

It is one of the best *Mercurial Preci-
pitates*, especially in the *Venerial Pox*.

Its *Operation* is Cathartick, and some-
times a little Emitick.

Its *Dose* is from two to twelve, or fif-
teen Grains.

The White Panacea of Mercury.

Grind *Calomelanos* to very fine Pow-
der, and put it into a Cucurbit,
with eight times its weight of Spirit of
Wine ; Place it in warm Sand ; Let it
stand fifteen or twenty Days, and shake
it every Day two or three times. Then
fit a Glass to the Mouth of the Cucurbit,
to make it a Circulating Glass ; Separate
the Spirit either by Decantation, or Di-
stillation, and dry the Powder in a gentle
Heat. This is called *Panacea Mercurii*.

Its *Dose* the same with *Mercurius Dul-
cis* ; and some think it a better and more
safe Medicine, because the Spirit of Wine
takes from it some of its Corrosive Salts,
or at least Corrects them.

White

White Precipitate.

Dissolve four Ounces of *Mercury* in eight Ounces of Spirit of Nitre ; when tis all Dissolved, put it into a wide-mouth'd Glass, in which is a Pint of Spring-Water ; shake them together, and pour on Filter'd Brine, by little and little ; let the Brine be as strong as you can make it ; to a Pint of which put in two Ounces of Spirit of Sal Armoniack ; stir the Matter about, and let it settle ; then put on more Brine ; stir, and let them stand to settle, as before ; and so continue, putting on Brine, till you perceive no more will Precipitate thereby. Then let it stand five or six Hours to settle, and pour off the Water by Inclination. Put on common Water ; stir it about, and when settled, Decant as before, and so proceed, putting on fresh Water, stirring and pouring off, till you find the Precipitate insipid. Then lay a clean Paper upon a Chalk-stone, put the Precipitate upon it, and let it lye there till the Chalk has absorb'd the Water ; then remove it to a Board ; and let it dry in the Shade, between two Papers.

Its

Its *Operation* is a little Cathartick, and Emetick sometimes; it also procures Salivation.

It is given in the *French Pox, Scurvy, and Yellow Jaundice.*

Its *Dose* is from five to fifteen, or twenty Grains.

If you boil it two or three Hours in Spirit of Wine, it will free it from some of its Corrosive Salts, and render the Medicine more safe.

Turbith Mineral.

TAKE four Ounces of *Quicksilver*, put it into a Retort, and to it four Ounces of Spirit of Nitre; Let it stand till it has done Fuming, then add Oil of Vitriol half a Pound; Place the Retort in a Sand Furnace, give it a gradual Fire to the Fourth Degree, and the Operation will be performed in six or seven Hours time; Then take out the Retort, and break it; Pulverize the white Mass, either in a Glas or Marble Mortar; Put it into a wide-mouth'd Glas, and pour to it three Pints of warm Water; Let it stand two Hours, and shake it three or four times; when 'tis settled, pour off the Water by Inclination, and keep it

by it self; Put more Water to the yellow Powder; stir it well about, and when settled, pour off as before, and so proceed with several Ablutions, till the Powder has no Taste; Dry the Powder upon a gentle Heat of Sand, and put it up for Use.

The first Washings are good to touch old and stubborn Ulcers with, and to mix with any sweet Water to Cure the Itch.

The *Turbith* is Cathartick and Emetick, and is chiefly used in *Venerial Cases*.

Its *Dose* is from two to eight Grains.

Green Precipitate.

PUT four Ounces of *Mercury* into a Matraſs, to which put of Spirit of Nitre, or double *Aqua Fortis*, eight Ounces. In another Glass put half an Ounce of fine Copper, which dissolve in an Ounce and half of Spirit of Nitre, or *Aqua Fortis*. Put both the Dissolutions together; place them in Sand, and Abstract the *Aqua Fortis*. In the bottom of the Vessel there will remain a blackish Mass, which must be Powdered in a Glass or Marble Mortar. This done, put it into a Cucurbit, and pour upon it four Pints

Pints of Distill'd Vinegar ; Set it in a Heat of Sand, where let it continue Fourty Eight Hours, shaking it once in two or three Hours. At last, augment the Fire, to make the Distilled Vinegar boil ; Let it continue so, at least one Hour, and when cold, pour off the Distill'd Vinegar by Inclination, and you will find it tinged of a green Colour ; Put upon that which remains, more Distill'd Vinegar, and proceed as before ; Filter the tinged Vinegar, and put it into a Cucurbit, set it in a Heat of Sand, to Evaporate gently, to the Coⁿsistence of Honey, or that it begins to sparkle ; then take it from the Fire, and let it cool ; when 'tis cold it will be an hard Mass, which make into fine Powder, and keep for Use.

Its Operation is Cathartick, and Emetick.

It is a Specifick in *Gonorrhœa*'s, and is given in all *Veneral Cases*.

The Dose is from two to six Grains.

Æthiops Mineral.

Take Flowers of Sulphur, and crude, clean Mercury, of each half a Pound ; Let them be ground together in a clean Iron Mortar, till they are Incorporated into a black Powder. It will take up four or five Hours time to grind it.

The Coraline Secret of Mercury.

TAKE four Ounces of *Red Precipitate*, put it into a Retort, and put to it eight Ounces of Spirit of Nitre; set it in a Sand Furnace, and draw off the Spirit in a gradual Heat, to the Fourth Degree: This Operation will be perform'd in five or six Hours: Return that Spirit of Nitre, with four Ounces of new Spirit upon the Precipitate, and draw off, as before; Repeat the same Operation, with four Ounces of new Spirit; and at last let it continue at least two Hours, in the Fourth Degree of Fire; Then let all cool, and you will have a very Red and Subtle Powder, which put in a Crucible, and set in a Fire of Charcole, but not exceeding a Worm Red, half a quarter of an Hour; Then put it into a Matras, and put to it three Pints of Distill'd Fountain, or Rain-Water; set it in a Sand Furnace, and give it a gradual Fire till it boils; and so keep it half an Hour: Pour off that Water by Inclination, and dry the Powder gently: Then put to it twelve Ounces of Tartaris'd Spirit of Wine, and in a gentle Heat draw it off, and so proceed by two Cohobations. Then put to it twelve Ounces of new Tartaris'd Spirit of Wine, fit

fit a Glass to the Mouth of the Cucurbit, to make it Circulatory ; Let it stand in a gentle Heat of Sand Fourty eight Hours, and at the last of all, let it simper a little ; then let all cool ; Decant the Spirit of Wine, and dry the Powder, which is called *Arcanum Coralimum*.

Its *Operation* is chiefly Cathartick.

It is given in the *Gout*, *Dropsie*, *Scurvy*, and the *Pox* ; and is one of the best *Pre-cipitates* commonly made.

Its *Dose* is from three to ten Grains.

Oil of Mercury.

Evaporate the First Washings of *Mineral Turbith* to a Salt ; set it in a cold moist place, and it will Dissolve into a strong Corrosive Liquor, which is call'd, *Oil of Mercury*.

It is of excellent Use to touch Venereal Shankers, if you apply to them Pledges dipt therein.

Another

Another Oil of Mercury.

TAKE four Ounces of Corrosive Sub-limate, and of Sublimed Sal Ammoniack half a Pound; make them both into Fine Powder, and mix them well; put them into a Retort; place it in Sand, with a Receiver to it; make a Fire, which raise gradually, to the Fourth Degree, and in seven or eight Hours time the Operation will be done.

Take all that is Distilled and Sublimed, grind it in a Glas or Marble Mortar, and afterwards set it in a Cellar, in a flat Glas, to Dissolve into a Liquor, which is call'd, *Oil of Mercury.*

It is Endued with the same Vertues the Preceding Oil is.

Observations

Observations.

Cinnaber.

Take care you place the Mixture in a Chimney, that the Stench of the Brimstone do not offend you. And Note, that it is sufficient if the Sulphur be kept in just so much Heat as to be Fluid, till such time the *Mercury* be Incorporated with it.

*Revificat.
of Cinnab.*

The Mixture is left twelve Hours without Fire, to give the Calx time to swell gradually, which otherways might endanger cracking the Retort; And also that the Alcalical Salt may have Mortify'd the Acid Sulphureous Spirit, by which the *Mercury* was Coagulated; which done, the *Mercury* will separate more easily: As for putting Water into the Receiver, 'tis a trouble to no purpose; for I have several times Reviv'd *Mercury* from an Amalgama of Cinnaber, Sublimate and Precipitate, without one drop of Water in the Receiver.

*Corrosive
Sublimate.*

The Mixture of *Crude Mercury*, Sublimate, Salt, and Nitre, becomes moist, and of a pappish Substance; to which, if you put the Rubify'd Vitriol, it wou'd presently grow hard as a Stone; which wou'd be very troublesome to Reduce again into Powder. But the *Caput Martis*

fum

tuum of *Aqua Fortis*, or (if you have it by you) some *Caput Mortuum* of *Mercury Sublimate* answers the same end, and brings the Mixture to a temperate dryness, which by Agitation comes into a Powder of it self. With this Powder the Rubify'd Vitriol may conveniently be Incorporated, and the Operation ought always to be performed in a Chimney, to avoid the Nitrous Fumes, which are very Suffocating. You may make the Composition in any quantity your occasion requires; the less your quantity of Mixtures, the less Time and Fire will finish the Operation.

When you grind the Sublimate and *The Sweet Crude Mercury* together, muffle your *Sublimate* self with a Napkin, or Handkerchief, to keep the Volatile Atoms, which will rise from the Sublimate, out of your Mouth and Nostrils; and be careful not to make the Fire too big, for too fierce a Fire makes it rise black, and if so, you must Sublimate it again; and if that Sublimation does not bring it to its colour, mix with every Pound of *Mercurius Dulcis*, one Ounce and a half of decrepitated Salt, and Sublimate again.

The *Aqua Fortis* which you save in *Precipitate* making of Sublimate is best for this Ope- *Red Subl.* ration, which also ought to be perform'd in a Chimney.

G

Before

White Pa- Before you put the Spirit of Wine to
naxx of it, you must reduce it into a most im-
Mercury. palpable Powder, which must be pass
 through the finest Sieve, that so the Spi-
 rit of Wine may the better act upon
 those Minute Atoms, and wash off part
 of the Corrosive Salt which keeps it in a
 dry Form.

Red Pan- The Red Precipitate must also be
ce of Mer- ground very fine, before it is wash'd, for
cury. the Reason aforesaid.

White Put not above two Ounces of the Spi-
Precipitate rit of Nitre at a time upon the Crude
 Mercury ; and when it has acted upon the
 Mercury, and the Fumes begin to cease,
 put on two Ounces more, and so do till
 the Mercury is all dissolv'd ; If you should
 put all the Spirit of Nitre on at once, the
 action would be so violent that it would
 heat too suddenly, and endanger the
 Glass : Be as cautious as you can, the
 Fumes will rise with some violence, and
 therefore this Operation ought always to
 be done in a Chimney that the ill Fume
 may be avoided.

Mineral The Oil of Vitriol does not Dissolve
Turbith. the Mercury, it only calcines it, but the
 Spirit of Niter dissolves it, and produces
 a Turbith more subtile than that made
 with Oil of Vitriol alone.

Here is nothing worthy of Remark, *Athiop Mineral.*
but to choose clean and good Ingredients, and to grind so long, till the Medicine becomes very black.

You ought to observe the same precaution here, as in the White Precipitate, *Green Precipitate.*
viz. to put the Spirit of Niter upon the Mercury by little and little, and also to perform the Operation in a Chimney.

You may take clean crude $\&$ instead *Arcanum* of Red Precipitat if you please ; The *Coralinum*: first Dissolution and Exsiccation makes it Red Precipitate, Then you may freely put all the Spirit of Niter upon the Precipitate at once, because the Action of the Mercury, and Spirit of Niter is over in the first Dissolution of the Mercury. In all things else proceed as the Process directs.

These Oils are Mercury coagulated by *oils of* the corrosive Spirits of Vitriol, common Mercury, Salt, and Sal Armoniac, which afterwards will dissolve again like a Salt ; it ought to be Evaporated in Glass, because Earthen Vessels will suck in too much of the Salt, and it will prey upon the Lead with which the Vessel is glaz'd.

*Corofive
Sublime
in small
quantity.*

If you desire to make Mercury Sublimate in a small quantity, Dissolve one Pound of crude Mercury in 18 or 20 Ounces of Spirit of Niter: Distill off that Spirit, break the Glafs, and take out the Mass, beat it into Powder in a Glass or Marble Mortar; and afterwards take of Vitriol calcin'd and powder'd, and Common Salt *Ana* one Pound; Grind them all well together; Fill a Matras not above half full, and set it on a Sand Furnace; Increase the Fire gradually to the Third Degree, and the Sublimate will all rise in Seven or Eight Hours.

C H A P.

CHAP. VIII.

Of Bismuth, or Tinglass.

IT is a Smooth, White, Metallick Matter, brittle, and breaks in large Flakes like *Regulus Martis*. It is Artificial, and compos'd of Tin, Tartar, and Arsnick, but not made in any Quantity in *England*, but in the Northern Parts of *Germany*, from whence we have it.

Preparations of Bismuth, or Tinglass.

Flowers of Bismuth, or Tinglass.

B Eat the *Tinglass* into very fine Powder, and to Four Ounces of it put half a Pound of Nitre also in fine Powder; put in that Mixture by half a Spoonful at a time, when the Body is red hot; and when the Operation is over, take away the Aludels, and wipe off the Flowers with a Feather.

These *Flowers* are very white, and Esteemed an Excellent *Fucus*.

Magistry of Bismuth.

PUT one Pound of Spirit of Nitre, (made with Oil of Vitriol) in a quart Body uncut, and put to it as much Powder of Tinglass, by an Ounce at a time, as the Spirit is capable of dissolving, which will be about Seven or Eight Ounces; Then take two Gallons of Water, and dissolve in it four Ounces of Common Salt; Filter the whole, and put it into a clean, Earthen Pan; Pour upon it the Dissolution of *Bismuth*, and immediately it will turn Milky, and a Precipitate will fall; Permit it to stand till settled, and by gentle inclination, pour out the Water from the *Magistry*; put on more fresh Water, stir it well, and when settled, pour it off, and so continue the ablutions, till the *Magistry* is insipid, which dry gently, and keep for use, which is the same with the Flowers.

Observations.

Flowers of Bismuth. LET all be sublimed, which will rise from one half Spoonful, before you put in another, which you may know

know by a little crackling Noise which will cease ; Wash the Salt from that which remains in the bottom of the Subliming Pot, and it is not only a good *Fucus*, but also a good *Diaphoretick*, especially if the Spirit of Nitre be once or twice distill'd from it after it's washing.

Its Dose and Vertue is the same with Mineral *Bezoar*.

Be sure to place the Cucurbit (in which you make the Dissolution) in the Chimney, the better to convey the Fumes, which are bad for the Breast, Lungs and Brain ; And if you see a black Scum upon the Surface of the Water, when you make the Precipitation ; take it off with a Spoon.

C H A P. I X.

Of Antimony.

Antimony is a Mineral Body, nearly related to Metals, but more approaching to the Nature of *Saturn*. It is composed of a Mineral *Sulphur*, partly pure, and of a Solar Nature, and partly combustible, like other *Sulphur*.

It is full of an indigested fuliginous Mercury, but more fixed than the Common. It is a most excellent Subject both for Internal and External Medicine, &c.

Regulus of Antimony.

Take of Antimony one Pound, Tar tar Twelve Ounces : Nitre Six ounces, powder them finely and mix them exactly ; Then put your Crucible in a Melting Furnace, let the Fire increase gradually till the Crucible is red hot, before you put in your mixture, which do by a small spoonful at a time till all be in ; Then increase the fire and stop the door of the Wind-Furnace and there let it continue in Fusion half or three quarters

ters of an hour till its sparkling in the Crucible is well spent, Then Poure it into a little Mortar, being first made clean, and afterwards heated and greas'd with a little butter, Tallow, or Wax. Let it stand till cold; and then turn it out; beat of the *Scoria*; and put it by in an Earthen Pan to make the *Sulphur Annatum* with; Then melt your *Regulus* again, and project one Ounce of Nitre in Powder: let it stand in fusion a quarter of an hour, and cast it out into the Mortar heated and greas'd as before, and it will be more pure.

If you would have it yet more pure, repeated the last Operation once more, still saving the *Scoria* together; This *Regulus* you may form into Cups, Pills, or infuse it in White-Wine Ten or Twelve Hours, and it will have the same Operation with the infusion of *Crocus Metallorum*.

Different Quantities are us'd in the making this *Regulus*; Some take Equal parts of Antimony, Nitre and Tartar; Others, Antimony one Pound, Tartar one Pound and an half, and Nitre two Pounds; but I have found no Composition produce more, nor better *Regulus* than this I have given you.

The Golden Sulphur of Antimony.

BOYL the *Scoria's* of the *Regulus* in Twenty times its Weight of Fountain-Water, the space of one Hour; Stir it often, and whilst hot, run it through a fine Straining-Clout; Then put Distill'd Vinegar to it, and there will Precipitate a red Powder; Let it stand to settle, and drop more Distill'd Vinegar into it, and if it turn the clean Liquor muddy, let it settle, and drop yet more Distill'd Vinegar again into it; and so proceed till you see the subsiding Liquor will not turn muddy by putting Distill'd Vinegar to it; Wash it with many warm waters till it is without Taste or Smell; Then put it into a Coffin of Paper to drain off as much of the Water as you can; And lastly, Put it into a flat Earthen Dish, and set it in a gentle warmth to dry.

It is Emetick and Cathartick, and Endow'd with the same Vertues other Antimonial Emeticks are.

Its Dose is from one to Six or Eight Grains.

The

The Martial Regulus of Antimony.

Take of small Nayls one Pound and an half, put them into a large Crucible placed upon a Tile in a Melting Furnace, let the *Fire* Kindle about them gradually till the nails are ready to melt, then project (by a good spoonful at a time) of Antimony one Pound, Nitre Four Ounces, and Two Ounces of Tartar, powdered and well mixt. Bury the *Crucible* in Charcole, shut the *Door* of the Furnace, and let it stand in the strongest Fusion till it has done sparkling: Then take it from the *Fire*, and pour it into an Iron Mortar, hot and greaz'd as usual: When 'tis cold, beat off the *Scoria*, and Melt it again; and put to it (by a Spoonful at a time) Two or Three Ounces of Nitre in gros Powder; Let it stand in strong Fusion as before, till it cease to sparkle; then remove it from the *Fire*, and pour it into a warm Mortar as before: Repeat the same Operation the Third and Fourth time, always casting in Two Ounces of Nitre, but the Fourth Time, let the *Regulus* melt well, before you put in the Saltpetre; when cold, beat off the *Scoria*, and you will see a perfect Star upon the Surface of the *Regulus*.

Its

Its Operation is as the *Regulus Antimonii*, but more Cathartick. Some say, 'tis altogether Cathartick, but I have not found it so.

It is given in the *Venereal Disease*, *Dropstic*, and *Scurvy*.

Its *Dose* is from Two to Eight Grains.

Regulus of Antimony with Tin.

Take good *Regulus of Antimony* Four Ounces; Melt it in a Crucible with Four Ounces of Tin a quarter of an Hour, in which time put in one Ounce of Nitre, and when the Flame is spent, and the Matter well fluxt; take it from the Fire, and cast it into a warm, greaz'd Mortar.

In the same Manner you may make the *Regulus* of Gold, Silver, Copper, or Lead.

It is usually given in the Suffocation of the Womb, and to open all Obstructions.

Its *Dose* is from Three Grains, to ² Scruple.

Cro-

Crocus Metallorum.

Take of Antimony one Ounce, Nitre Fourteen Ounces, and Common Salt Twelve Ounces; Powder them finely, and mix them well: Set a Crucible in the Fire; when it is red hot, put in the Mixture by a Spoonful at once; When all is in, shut the Door of the Furnace; Let the Matter stand in strong Fusion half an Hour; Then take it from the Fire, and cast it into a warm, greaz'd Mortar.

Its Operation is Emetick. But the Infusion of it in White-Wine or Canary, is generally us'd thus, (*viz.*) One Ounce of the *Crocus* in fine Powder, to a Quart of Wine; of which is given from one Ounce and an half, to Four Ounces.

Its *Dose* is from Two to Eight Grains.

Diaphoretick Antimony.

Take of Antimony one Pound, and Saltpetre Three Pounds; Powder and mix them exactly; Then put them into a red hot Crucible, by a Spoonful at

at a time, and let it stand half an Hour; Remove it before 'tis quite cold, and put it into a large Earthen Pan, almost full either of hot or cold Water: Let it remain there Ten or Twelve Hours to dissolve the Salt; then take it out, and if any of the Calcin'd Antimony adheres to the Crucible, scrape it off with a Knife; stir the white Matter about with a clean Stick, and when 'tis well settled, decant the Water into a clean Pan, and keep it to make the Antimonial *Sal Pennellæ*; Put on more warm Water, and decant it as useless; Repeat the Ablution till the Antimony is insipid. When this is done, put more fresh Water, stir it about, and presently pour it off into another Pan; put on more, and pour off as before, and so do till all the finest part of the Preparation is washt off, and by this means you may separate it from the gross, dirty part: Having thus separated the finer part, let it stand to settle, and pour off the Water by Inclination; Put the *Antimonium Diaphoreticum* upon a clean Sheet of white-brown Paper, and lay it upon a Chalk Stone to suck in the Moisture; Remove it into a very gentle heat to be perfectly dried, and put it up for use.

Its Operation is Diaphoretick, and is given in *Venereal* Diseases, *Dropes*, *Scurvies*, *Malignant Fevers*, and the *Small Pox*.

Its usual *Dose* is from Five Grains to Twenty Five; but I have known it given with good Success by half an Ounce at a Dose, and repeated Two or Three times in a day, and that for several days successively.

The first Washing which you put by, may be evaporated, and you will have the *Antimorial Sal Prunellæ*, which is endow'd with the same Vertues as *Sal Polichrestum*.

Ceras of Antimony.

IT is made with the *Regulus* of Antimony and Niter in the same Proportion and Manner as you made the *Antimonium Diaphoreticum*.

Its *Use* and *Dose* the same.

Antihæticum Poterij.

IT is made of one part of *Regulus Jovis*, and three parts of Nitre beaten into Fine Powder, and mixt, and in all things

things proceed as you did with *Ceruff Antimonij.*

Its admistred in the Pox, Hectick Fevers, and Consumptions.

Its Dose is from Five Grains to a Drachm.

The Medicinal Antimony.

Antimony Five Ounces, Salt of Tar one Ounce, Common Salt Four Ounces, Powder and Mix them well, and let them stand in the Crucible half an Hour melted ; Then turn out the Compound into a warm, greaz'd Cone, or let it stand in the Grucible till cold ; beat off the Scoria, and powder the pure part which remains in the bottom ; give it several lotions of warm Water till the Salts are all washt from it : Then dry it, and keep it for use.

Some attribute only a Diaphoretick Quality to it ; but it will in some Constitutions, both Vomit and Purge.

Its Dose is from Three to Fifteen Grains.

The Magistry of Antimony.

TAKE Four Ounces of *Antimony* in very Fine Powder; Put it into a large Matrass; pour upon it one Pound of *Aqua Regis* by Four Ounces at a time, set it upon a Sand-heat in a Chimney, that the Fumes may ascend without offence; Make a small Fire, and let it stand in a heat of digestion Ten or Twelve hours, shaking it once in Two or Three hours; Then let it cool and put to it a Gallon of Fountain Water, which you must pour off before it settles; put to it more Water: stir it and pour it to the other before it settles, repeat this Operation till nothing remains in the Matrass but a Yellow Powder, which is the combustible *Sulphur of Antimony*; Let the white powder settle, and decant the Water, and by several Ablutions make the *Magistry*, insipid, dry it, and Keep it for use.

Its operation is more Cathartick than Emetick, sometimes it operates by Sweat,

It is used in Apoplexies, the Palsie, and Hypochondriacal Distempers.

Its Dose is from Five to Fifteen Grains.

Poterius his Cordial.

Take *Regulus Martis* in fine Powder Four Ounces, of Gold dissolved in *Aqua Regis* one Ounce and an half; Let the *Aqua Regis* be drawn from the Gold, then mix it with the *Regulus*; Put to the Gold and *Regulus*, twelve ounces of Nitre; Mix all Exactly, and put it into a red hot Crucible by a spoonful at a time; Let it stand in a melting heat an hour, then let it cool, and proceed, as you did in the *Antibedicum Poterij*, or *Cerussa Antimonij*: I have made it both with Gold and the anodine *Sulphur* of *Mars*; and the latter has been approv'd of as the better Medicine.

Its Operation is Diaphoretick, and It is said to be a purifier of the Blood, a strengthener of the Heart and Stomach, good against Malignant Fevers, the Small-Pox, and the Plague.

Its Dose is from Six Grains to Two Scruples.

If to one Ounce of this Magistery you put Twelve Ounces of *Spiritus Nitri Dulcis*, and let them stand Three days in Digestion in a Matras, shaking them now and

and then, after which draw off the *Spiritus Nitri Dulcis*; and if you afterwards put upon it one Pound and an half of Spirit of Wine tartaris'd, and let it stand Twenty Four hours on warm Sand and Decant the Spirit of Wine, and lastly set it in the Arch of a Glass-House Five or Six Days, it will have aquir'd a red colour, and be more Diaphoretick.

Its operation is then Diaphoretick and sometimes a little Cathartick ; and I have heard it has cur'd the Veneral Pox and Gout, Kings-Evil, and Leprosie.

Its Dose the same as before.

The Glass of Antimony.

Take a Pound of *Antimony*, and reduce it into Fine Powder, and set it over a gentle Fire; calcine it in an Unglaz'd Pan, till it comes to be of an Ash-Colour and ceases to Fume; you must keep it continually stirring, and if it should run into Lumps, you must powder them again, and then proceed to finish the Calcination: When that is done, put the Calcin'd Antimony into a Crucible; set it upon a Tile in a Wind Furnace; put a thin Tile on the

H 2 Top

Top, and cover it all over with Coles, and when 'tis brought to Fusion, keep it so in a strong Fire for an Hour; then put into it an Iron Rod, and when the melted Antimony which adheres to it, is transparent, powr it upon a smooth hot Marble, and when 'tis cold, put it up for use; This is *Vitrum Antimonii*, or *Stibium*.

Its Operation is Emetick, and one of the strongest that is prepared.

Its Dose is from Two to Eight Grains. It is used in Infusion like *Crocus Metallo-rum*, and given in the same Cases.

White Flowers of Antimony.

P Repare a Sett of Subliming Pots, and let the lowermost be of the Shape of an Earthen Body; it must be Twelve or Fourteen Inches high, and its Mouth Three Inches Diameter; In the middle of this Body must be a Perforation of an Inch and a quarter Diameter, exactly fitted with a Stopple of good Earth; Place this upon an Iron Bar in a naked Furnace, Nine or Ten Inches above the Grate; and close the Body to the Perforation

ration with Lute and Tiles, only leaving Three or Four Registers of an Inch and a quarter Diameter, at an equal Distance. Then fit to it Three or Four Aludels of Earth, one above another, and upon the uppermost Aludel fit a Glass-Head with a Beak ; Lute the junctures of the Aludels Body and Head ; and to the Beak fit a small Receiver un-Luted.

Kindle the Fire, and when the lower Pot is red hot, put in of Antimony in Powder about a Spoonful, with a Latin-ware Scoop made for that purpose ; Keep up the Fire well, and when you perceive no more Fume to rise into the Head, put in another Spoonful, and so continue till you have as many Flowers as you desire ; when all is cold, take off the Aludels carefully, and with a Feather wipe off the Flowers upon a Sheet of Paper, and put them up for use.

It is a strong Emetick, and its violence is such, that 'tis seldom given without Correction.

It is given to Lunaticks ; also in Agues, and all intermitting Fevers.

Its Dose is from Two to Five or Six Grains.

*Flowers of Regulus of Antimony,
with Sal Armoniac.*

Take *Regulus of Antimony*, and clean *Sal Armoniac* ana half a Pound, Powder and Mix them well ; and in all things proceed as in making the other Flowers. When you wipe the Flowers from the Aludels ; Put them into clean Water to dissolve the *Sal Armoniacum*, and wash the Flowers from the Salt ; Dry them, and put them up in a Vial for use.

They are not so violent as the former, and given in the same Cases.

*Antimonium Resuscitatum, or Anti-
mony Reviv'd.*

Take the Flowers of Antimony and *Sal Armoniacum*, without separation ; Put them into a Cucurbit, and to every Four Ounces of these Flowers, put of Distill'd Vinegar One Pound ; Let them stand upon warm Sand in Digestion Eight Days ; Then exhale the Distill'd Vinegar, and by Ablution sweeten the Flowers, which then will be of the Pristine

stine Colour of Antimony, and is accounted a very good Medicine.

Its Operation is Emetick and sometimes Diaphoretick.

It is administred in the Scurvey, Drop-sie, Jaundice, Agues, Fevers and Consumptions.

Its Dose is from Four to Ten Grains.

Dr. B's. Panacea of Antimony.

Take of Antimony Six Ounces, of Nitre Ten Ounces, of Common Salt One Ounce and an half, and of Charcole an Ounce ; Let them all be made into Fine Powder, and well mixt, and be put into a red-hot Crucible by half a Spoonful at a time, continue the Fire a quarter of an Hour after : Then either pour it into a Cone, or let it cool in the Crucible, and you will find Three Substances, *viz.* in the Bottom a little *Regulus*; above that a compact Matter, something like the Liver of Antimony, and upon the Surface, a more Spungy Mass ; separate them one from another, and put by the *Regulus*; Powder the other two, and

H 4 wash

wash them a-part, till they have no Taste of the Salts ; dry them gently, and keep for use.

The uppermost Substance is counted the best, and is of a fine Golden Colour, when 'tis washt. The middle Substance is not of so pleasant a Colour, and works more Churlishly. The *Regulus* is equal with the *Regulus* of Antimony.

Its *Operation* is Emetick and Cathartick, and is given in the *Venereal Pox*, *Gout*, *Dropfy*, *Scurvy*, and all *Intermitting Fevers*.

Its *Dose* is from *Two to Five or Six Grains*.

☞ This is that which Mr. *Lockyer* aimed at in the Composition of his Pill, by which he got a good Estate.

The Panacea of Antimony without Fire.

Reduce Four Ounces of Antimony into a most subtle Powder; Put it into a Matrass, and pour upon it One Pound of strong Capital Lees of the Soap-Boylers: Set them to Digest on ^{warm}

warm Sand, Four or Five Days, and shake them often; Then add some warm Fountain-Water; shake it well about; let it stand Two or Three Seconds of Time, and pour it off into a clean Pan; Repeat that Ablution, till all the brown Powder is separated from that which appears like crude Antimony; to which put more Capital Lees, and so proceed in all things as before, till all the Antimony is brought into a subtil brown Powder; which wash well from its Salts; Dry it, and keep it for use.

Its *Operation* is sometimes Diaphoretick, other times Diuretick; and also, Cathartick and Emetick.

Its Vertues are the same with other Antimonial Preparations; and is frequently given as a Succedanum to that call'd *Russel's Powder*.

Its *Dose* is from Five Grains to an Ounce and an half, or Two Scruples.

*The Butter, or Icy Oil of Antimony,
and its Cinnaber.*

Take of Antimony and Mercury Sublimate *ana* Two Pounds; Powder and Mix them well; Put them into a coated Retort, which must not be charg'd above a Third Part; Set it up on an Iron Bar in a little flat Dish with some Sand in it in an open Furnace; Make a small Fire at first, but increase gradually to the Second Degree, and the Butter will rise into the Neck of the Retort, which melt into the Receiver with Live Coles. Keep the Fire still in that Degree, till you perceive the Neck of the Retort tinged Red: Then change the Receiver, and increase the Fire to the Third Degree, where keep it two Hours, after that give two Hours Fire of the Fourth, and it will raise the Cinnaber into the Neck of the Retort: When all is cold, take it out of the Furnace, break the Retort, and take out the Cinnaber.

It is only used Externally as a Catstick.

Mercurius

Mercurius Vitæ.

LET the Butter be melted, either by the Air, or a gentle Heat: Put it in a clean Retort; Set it in a Sand Furnace, and by a Fire of the Second Degree Distil it; The Butter will be made more white and pure, and by this Rectification be separated from some dirty Fæces, which will remain in the bottom of the Retort. Melt all the Rectify'd Butter into the Receiver, and put to it warm Fountain-water; stir it well with a clean Stick; when 'tis settled, pour off by Inclination, and keep the first by; Put on more Water, stir, and let it settle; and so do till the Powder is freed from all saltish Taste; then dry it gently, and keep for Use.

Its *Operation* is Emetick.

Its Vertues are the same with the *Flowers of Antimony*.

Its *Dose* from two to eight Grains.

Mineral

Mineral Bezoar.

Take four Ounces of Rectify'd Butter of Antimony; Put it into a Retort, and to it twelve or sixteen Ounces of Spirit of Nitre, by two or three Ounces at a time. Place the Retort in a Chimney, to avoid the hurtful Fumes: When all the Spirit of Nitre is in, and the vehemence of its Action over, put it in a Sand Furnace; Fit and Lute a Receiver to it, and give gradual Fire to the Third Degree. When it ceases to drop, let out the Fire, and when cold, take it out, and keep it in a Glass well stopt from the Air.

Its *Operation* is Sudorifick; which Operation it performs more sensibly than Antim. Diaphoret.

It is counted a great Resister of Poison, and given in all Pestilential Distempers.

Its *Dose* is from ten Grains to two Scruples.

Some Calcine it in a Crucible, after it is taken out of the Retort: Others think it better to let that part of the Spirit of Nitre it holds, to remain with it.

Oil of Antimony, with Sugar-Candy.

Take of Antimony and Sugar-Candy, of each one Pound; Let them be well powdered, and mixt with three Pound of clean dry Sand; Put them in a Retort, leaving it above half empty; Set it in a Sand Furnace, and with a Fire of the First Degree; let the Flegm Evaporate, till the Drops come Acid. Then throw away that which is Distill'd, and fit the Receiver again, which Lute with a Bladder dipt in the White of an Egg; Increase the Fire to the Second Degree, and so keep it one Hour; then to the Third, in which continue it two Hours; and so proceed to the Fourth two Hours more, which will finish the Operation: When all is cold, take out the Liquor, and keep for Use.

It cleans Ulcers and Teters, it also kills the Itch.

The Essence of Antimony.

Take the Flowers of Antimony, or *Mercurius Vitæ*, and *Sal Mirabile*, of each one Ounce; of clean Crystals of Tartar two Ounces; of Sugar-Candy four Ounces;

Ounces; Powder and grind them well together; Put them in a clean Pan, with three Pints of Spring-water; Let them simper over a Fire, for eight or ten Hours, and stir them often. Filter the Liquor whilst it is warm, and Evaporate it in a gentle Heat, to the Consistence of a Syrup. Then put to it a Pint of Spirit of Wine; let it stand in Digestion in a Matras well stopt, three Days, in which time it will be well tinged: Then by gentle Inclination, pour off the Tincture into a Body, to which fit a Head and Receiver, and draw off one half of the Spirit of Wine; that which remains in the Body put into a Vial, and keep for Use.

Its *Operation* is Emetick and Cathartick, and is given in all Diseases wherein Antimonial Medicines are proper.

Its *Dose* from five, to fifty Drops, in Ale, Wine, Milk, or Water.

The Tincture of Antimony.

PUT half a Pound of Salt of Tartar into a Crucible, set it in a melting Furnace, and heat it till it melts; Then put to it (by a spoonful at a time) four ounces of Antimony in Powder; let it stand in a strong melting heat, the space of

of One Hour; Take it from the Fire and put it into a warm Mortar; beat it to Powder, and whilst warm, put it into a Martrass; Pour upon it Tartaris'd Spirit of Wine one Pound, and invert a Glass into the mouth of the Cucurbit; lute it well, and set it in Digestion Three or Four Days, in which time the Spirit of Wine will be well tinged, take it from the heat, set it on one side to settle, and decant it into a dry Vial, which keep well stopt for use.

Its *Operation* is Diaphoretick and Diuretick, It opens the obstructions of Women, is good against Hypochondriack Melancholy, Small-Pox, and Malignant Feavers.

Its Dose is from Ten to Fifty or Sixty Drops.

Tinctura Regalis.

Take of Copper in little pieces Two Ounces, put it into a Crucible, set it in a melting Furnace; when it is red hot, put to it (in gross Powder) Fourteen Ounces of *Regulus Jovis*; Let them melt well together the space of a quarter of an hour; Then cast them into a warm greas'd Cone, when cold, beat them into fine Powder, which must be put (by

a spoonful at a time) into double its weight of Melted Salt of Tartar, when it is all in, shut the door of your Melting Furnace, and keep it in the strongest Fire you can give for Two or Three hours: Then take it from the Fire: and pour it into a clean warm Iron Mortar, beat it to Powder whilst warm, and before it attract any Air, put it into a Matras wherein there is One Pound of Spirit of Wine tartaris'd; Lute it as you did the *Tinctura Antimonij*, and in all things proceed as in that Tincture.

Its operation is Sudorifick and Diuretick: some think it almost an Universal Medicine, and indeed I have known it successfully us'd in several distempers.

Its Dose is from Twenty to an Hundred Drops.

Observation

Observations.

The Melting Furnace must be placed in a Chimney, and have a care you do not bring any spark of Fire along with the Spoon you project the mixture with, if you do, it will set all the Composition on Fire.

If you do not pass the Liquor through the Strainer while it is hot, it will coagulate, when it has past the Filter, and when you preceipitate the Sulphur, remove it into some place where the Stench may not offend you. You must wash it very often with warm water, to dissolve the Salts which adhere very strictly to it.

Nails are better then Filings of Iron, because they lie more hollow, giving way for the Antimony to mix and melt more easily with the Mars.

If you give this *Regulus* Two or Three *Regulus* Fusions more, and in each Fusion cast *Fervit*, one Ounce and an half of Nitre into it, and do so as long as the Nitre meets with any Sulphur to cause a flame, the *Regulus* will be as white as Silver.

I lessen the usual Quantity of Nitre, *Crocius*, and in its place substitute Common Salt, *Metaborum* which

which both helps Fusion, and causes a better Separation of the Crocus from the Scoria.

Antimon. Diaphoret. You must in this, as in most Calcinations of Antimony with Nitre, be careful not to bring a Spark of Fire from the Furnace to the Mixture; and after Calcination, beware you put not the Crucible into Water, when it is too hot, least it fly all about your Face.

Cerussa Antimon. In the *Cerus* there is no danger of firing the Mixture, because the Combustible Sulphur is spent in making the *Regulus*.

Antibell. Poterij. The Jupiter gives it a Blewifh Colour; and that is all in which it Differs from the *Cerussa Antimonij*.

Antimonium Medic. Let the Salts be very dry when they are mixt with the Antimony, and after they are Sufficiently melted together, and become cold, make them into a subtle Powder, before you wash off the Salts.

Magister. Antimonij. Make the Dissolution in a Chimney and in a large Vessel, because the Ebullition is so Violent, that if the Vessel be not large, the matter will boil over.

Poterius. If you will not be at the Charge of *bis Cordial* Gold in this Preparation, the Anodine Sulphur of *Mars* is a good *Succedaneum*. *Its*

Its Calcination requires Care and Patience ; The Fusion must be strong, and the Quantity propos'd in the Proces, requires at least Two hours Fire.

This Operation requires Attendance ; for If you let the Heat slacken you will loose both Time, and Fire considerable before you raise the Flowers again.

If you desire but a small quantity of these Flowers, you may perform the Operation in a Sand Furnace, by putting the matter into a Retort, fitting to it a Receiver, and proceeding with gradual Fire, as you do in the Preparation of *Ens Martis*.

If you make this Medicine of the Flowers of *Regulus*, it will be milder than *resuscitare* that made of crude Antimony, because much of its foul Sulphur is evaporated in the Preparation of the *Regulus*.

If you mix Ten Grains of the finer sort of this Preparation with one Ounce of *Panacea* white Sugar-candy in impalpable Powder, and will make them up into a Mass, you may divide them into an Hundred Pills, and One, Two or Three of these will work gently by Stool and Vomit. The Mucilage of *Gum Tragac.* is proper to make up the paste.

Reduce the Antimony into most subtil powder, and see that the Capital Lees *Panacea* *Sine igne*:

and Vessel be clean, and you cannot Err in this Operation.

Butyrum Antimonij. When you mix the Sublimate with *Antimonij.* the Antimony muffle your self for a Defence against the Steam of the Sublimate; and also carefully avoid the Fumes of the Butter when you change the Receiver.

Mercurius Vitæ. If you have a Pound of *Butyrum*, put not above four Pound of water to it for the first Ablution: stir it often with a clean wooden Spatula to break its Coagulum; Then let it stand to settle, and carefully pour off the Water, of which by Rectification is made the Philosophick Spirit of Vitriol.

Bezoard. Mineral. Lute not on the Receiver, till the violence of the Fumes are over, lest when the Fire augments its Motion, it break the Retort or Receiver. Do not exceed the third Degree of Fire, nor let it stand long in after the Spirit of Nitre is drawn off, to prevent discolouring the *Bezoardicum Minerale*. The Spirit of Nitre being now impregnated with the Spirit of Common Salt which was in the *Butyrum* is become an *Aqua Regia*, and will dissolve Gold, and is call'd *Spiritus Niri Bezoardicus*.

Ol. Ant. cum Saccaro. The Sand is mixt with the Antimony and Sugar, to hinder the matter from boiling

boiling over, which it would be very apt to do without the Sand; If you would have it freed from its Empyreum, and fit for internal use; weigh the Oyl and Spirit; and put to it a Third part its weight of *Spiritus Nitri Dulcis*. Set it in a Matras, upon warm Sand, in Digestion Four or Five days, Then put it into a long bodied Retort, or Cucurbit, with its head and Receiver; Lute the joynts, give gradual Fire to the Third degree, which Keep till it leaves dropping; Then put up the Spirit for use.

It is accounted an excellent remedy against all intermitting Feavers, Especially Quartane.

Its *Operation* is gently Emetick, and Cathartick.

Its *Dose* from Five to Fifty drops.

As the Liquor Evaporates in boiling, *Effemina* take care to supply it with clean warm *Antimonij*. Water till it is fit to be Filtered.

If you would produce this Tincture in *Tinct. Anni*. less time then the Process directs, let it stand in such a Heat as will keep the Spirit of Wine simpering five or six hours, and the Tincture will be Extracted.

Tinct. Rega. In place of two Ounces of Copper, if you put two Ounces and an half of the *Scoria* of Copper (which the Brasiers call *Spill-dust*) you will have a more glorious Tincture.

Some are of Opinion, That the Extractive Quality of Antimony is not to be so far destroyed by any Preparation that can be made thereof, but that it will return again when it has bin kept for some time, or expos'd to Air; but I have kept several of the foregoing Preparations, and especially the Tinctures, many Years without any sensible alteration.

CHAR

CHAP. X.

Of Lapis Calaminaris.

IT Dries, Binds and Cleanses, fills Ulcers with Flesh, and is a good Ophthalmick; It Incorporates with Copper, and makes Brafs: It is found in the *North Parts of Germany*, in the *North of Wales*, and in the *West of England*. Internally it is not much us'd; although it affords one of the best Emeticks and Diaphoreticks commonly known.

Preparations of Lapis Calaminaris.

The Magistery of Lapis Calaminaris.

TAKE four Ounces of *Lapis Calaminaris*, beat it into fine Powder; Put it into a Matras, and Pour upon it one Pound of Spirit of Salt; Let them digest upon warm Sand fourty eight Hours; Filter the Dissolution, and Precipitate the Magistery with Spirit of Urin; free it

I 4 from

from its Salts by several Ablutions; dry it gently, and keep for Use.

Its *Operation* is Emetick and Cathartick, and is us'd in all Cases wherein Antimonial Emeticks are proper.

Its *Dose* is from three to eight Grains.

Diaphoretick Calaminaris.

Beat four Ounces of *Lapis Calaminaris* into fine Powder; Put it in a Matras (which place in a Chimney) and put to it (by three or four Ounces at a time) one Pound of Spirit of Nitre; Let it stand covered from Dirt falling into it twenty four Hours; then decant the clear Liquor, which put into a Retort; set it in a Sand Furnace, and give it gradual Heat to the Third Degree, and so keep it till no Drops fall from it. When all is cold take it out of the Retort, and keep for Use.

It is a good Sudorifick, and answers the Purposes of Antimonial Diaphoreticks. It is also an Excellent Collyrium; one Ounce of it being infus'd twenty four Hours in half a Pint of white Wine, and a drop or two of that Infusion put into the Eye, three or four times a Day.

Its *Dose* from ten Grains to half a Dra.
 Obser-

Observations.

LET the Spirit of Salt be Rectify'd, *Magister.*
because in the first Distillation there *Lapis Cal.*
is mixt with it a foul Sulphur or Flow-
er, which may discolour the Magistery.

Some Persons will wash the Diaphoret. *Calamin.*
when taken out of the Retort; others *Diaphoret.*
will put to it three times its weight of
Tartaris'd Spirit of Wine, and let it
stand in Digestion twenty four Hours,
shaking it often, and then let it simper
one Hour, and when cold, pour off the
Spirit of Wine, and dry by a gentle
Heat the Diaphoretick, which they keep
for Use.

It is a good Diaphoretick.

Its *Dose* from ten, to fourty or fifty
Grains.

CHAP

C H A P. XI.

Of VITRIOL.

Of *Vitriols* we have six Sorts Vendible among us (viz.) *Hungarian*, *Dantzick*, *Roman*, or *Cyprus*, *English* and *Germain*, and likewise *White Vitriol*. It is said they are all Compos'd of an Acid Salt, and Sulphureous Earth; but it is most certain that there is a Proportion of Metal in them all, as it evidently appears by rubbing *Dantzick*, *Hungarian*, *Roman*, and *White Vitriol*, upon the Blade of a Knife, which they will leave tinged of a Copper Colour. And in *London*, it is well known, that all the Old Iron which is gathered by many poor People, are sold to the Copperas-Houses at *Rotherhithe* and *Deptford*, which they boil up with the Dissolution of the *Merchaſite Pyritis*, or *Fire-stone*.

In Colour the *Hungarian* and *Dantzick* are Green, but the first is the deeper: The *Roman* or *Cyprus* is Blue; The *English* is yet of a Paler Green than either. The *White* takes its Name from its Colour. There is also a Red Vitriol, which is that of *Germany*, and yet of no great

Use

Use among us. It is suppos'd to be a Green Vitriol, Calcin'd by a Subterranean Heat.

The Purification of Vitriol.

ALL *Vitriols* are made Pure by Dissolution, Filtration, Evaporation and Coagulation, or Crystalization. If you will Purifie them to the height, you must so often Repeat the former Operations, that by ten Days digestion between each Dissolution, there will settle no Fæces.

Calcination of Vitriol.

PUT what quantity of *Green Vitriol* you please into an Earthen Pot; make a gradual Fire under it, and as it heats, it will dissolve; continue the Fire, and increase it, till the Liquor is again Coagulated, and the Mass of a greyish Colour.

This is Calcin'd Vitriol, fit for some Uses: But if you design it fit for the Distillation of its Oil, or for *Calcanthum Rubefactum*

Rubefactum, you must continue it in a strong Fire, till it is very Red.

It is us'd to stop Blood, being apply'd to the Wound.

The Distillation of Oil, and Spirit of Vitriol.

Beat the Colcothar to Powder, and sift it through a corse Hair Sieve, then put into those Pots call'd Long Necks, five or six Pound a piece of Calcin'd Vitriol, and place them in a Reverberatory Furnace; Lute on the Receivers, with Lutes made of Clay, Sand, and cut Flax; then make a small Fire under the Grate, with Charcole and Small-cole; stop the Fire-hole of the Furnace, and the Ash-hole slightly: Let the Fire smother so six or eight Hours, to dry the Furnace and Junctures of the Receivers: Then put the Fire upon the Grate, and keep it in the first Degree six or eight Hours; increase it to the Second, four or five Hours, and so to the Third, which will raise white Clouds into the Receiver; continue it so long as you see white Clouds come over; when they begin to abate, augment it to the Fourth

Fourth Degree in its Extremity, and continue it till the Vitriol emits no Fumes.

Then let all cool, and carefully take off the Receivers, and put the Distillation into a Retort, which place in a Sand Furnace; fit a Receiver without Luting; make a gentle Fire, which will raise a little insipid Flegm, which has a Sulphureous Smell; put that into a Vial, and stop it. Put on the Receiver again, and continue the Second Degree of Fire, and so pass on to the Third, which continue till Fumes rise into the Receiver, and you perceive the Oil in the Retort to be clear and white, as Rock-water: Then let all cool, and put the Spirit by it self, and the Oil left in the Retort by it self also.

The Sulphureous Spirit is given in Palsies, and Diseases of the Lungs. The Spirit is commonly mixt with Juleps. In *Physick* the Oil is of the same Use as that of the Spirit, in an Eighth, or Tenth Part the Dose.

*Gilla Vitrioli, commonly call'd, Salt
of Vitriol.*

Dissolve what Quantity of white Vitriol you please in warm Fountain-Water, Filter it, and let it stand warm twenty

twenty four Hours to settle its Fæces: Decant it off from the Sediment, and Evaporate it to a Pellicle in an Earthen-Pan. If you see still some yellow Fæces at the bottom of the Pan, pour it out into a clean Vessel, by gentle Inclination, and set it two or three Days in a cold place to shoot into Crystals.

Its Operation is Emetick.

Its Dose from ten Grains to one Dram.

There is a Salt Extracted with ~~warm~~ Water out of the *Caput Mortuum* of the Oil of Vitriol, which is very little (if at all) in Use.

The Compound Cathartick Salt of Vitriol, and its Sulphur.

Dissolve what Quantity you please of Common Martial Vitriol; Filter the Dissolution, and put it into a Matras, set it in Digestion fifteen Days; if any Fæces fall in that time, carefully decant the Liquor from them into a clean Vessel, and drop into it as much Oil of Tartar, as will Precipitate all its Sulphur, which you will see fall in a brown Powder. Let it settle, and pour off the clear Liquor.

Liquor. Evaporate it to a Pellicle, and set it by in a cold place to shoot into Crystals.

The *Operation* of the Crystals is Cathartick and Diuretick.

Its *Dose* from ten Grains to 2 Scruples, or one Dram. It is a very Aperitive and Cleansing Medicine. The Sulphur is the same with that of *Mars* before-mentioned.

Aqua Stiptica.

Take *Colcotbar*, burnt Allum and Sugar Candy *ana* one Drachm, Urin of a sound Person, and Rosewater *ana* one Ounce; Plantane-water Four Ounces; Grind all well together in a Mortar till it is without the least Lump; then put it into a Matras, and let it stand in Digestion Twenty Four Hours; let it settle, and pour it from the Fæces. If you would have it more *Stiptick*, put one Drachm of the Liquor left after the last shooting of *Sal Chalibis*, or *Vitriolum Martis* to it.

Spiritus

Spiritus Vitrioli Dulcis.

PUT into a Matrass, Spirit of Wine Two Pounds, and pour into it one Pound of Oil of Vitriol, by an Ounce at a time; fit and lute on a Head and Receiver; kindle the Fire, which increase gradually to the Third Degree, till no Drops fall from the Nose of the Head; Then cease the Fire, and put what is Distilled into a Vial well stopt.

Some will return the Spirit upon the Black Matter left in the Body, and draw it over again; and so do three or four times till nothing is left but a dry, black Crust.

Its Operation is Diaphoretick and Diuretic.

Its Dose from Twenty to an hundred Drops, in a large quantity of Liquor.

The Diaphoretick Spirit of Vitriol.

TAKE of Salt of *Tartar* and burnt *Harts-horn* Two Ounces; put them in a Matrass, and add to them, by little and little, half a Pound of the foregoing *Spiritus Vitrioli Dulcis*; set the Mixture in a Sand Furnace, fit to it a Head and Receiver, lute well the Junc-
tures,

tures, and draw it off to a dry bottom, in a Fire of the Second Degree: Then take off the Spirit, and put to it Saffron and Cocheneal *ana* one Ounce, *Virginia Snake-root* half an ounce, stop the Vessel well; set it upon warm Sand to Digest Twenty Four Hours, sometimes shaking it; afterwards let it settle, and keep it in a Vial well stopt.

Its *Operation* is Diaphoretick and Diuretick.

It is given in all Fevers, and even in the Plague it self, with good Success: Also in Dropes and the Jaundice. It powerfully opens Obstructions, and cleanses the Lungs.

Its *Dose* is from Thirty to one hundred and twenty Drops.

The Medicinal Stone.

TAKE common Green Vitriol half a Pound; and the same quantity of White Vitriol, of Allum twelve Ounces, Anatron or Sandiver, and common Salt *ana* one Ounce and a half, Salt of Tartar two Ounces: beat them grossly, mix them with four Ounces of Vinegar, and put all into an Earthen Pan, which will contain three times their quantity; set

K them

them in a Fire to melt, and stir them often; when they begin to thicken, mix diligently of *Venice Ceras* four Ounces, and of *Boile Armoniack* two Ounces, both in fine Powder; keep them in the Fire, continually stirring 'till they grow hard; then let all cool, break the Pot, and pick up the Stone for Use.

It Fastens Teeth, Preserves the Gums, Heals and Dries up Ulcers and Wounds, and is also us'd in Injections, and Eye Waters.

The Sympathetical Powder.

Take good *English Vitriol*, such as we call *Bow-Copperas*, Purifie it before directed, by two or three Dissolutions, Filtrations, and Crystallizations; set those Crystals in a clean Pan in the Sun, either of *June*, *July*, or *August*, so long till they are Calcin'd to Whiteness; when one side is Calcin'd, turn the other, and in a few Days the Crystals will crumble into Powder; if they do not, you may Beat, and Expose them again to the Sun, stirring them three or four times every Day: At last beat them into very fine Powder, and again set them

in the Sun, stirring as before, for two or three Days more, in which time they will be very white: Then take in the Matter, while the Sun shines hot upon it, and keep it from the Air in Glasses well stopt, and in a dry place.

It is a Mild, but a Powerful *Stiptick*, always successfully apply'd in Stopping of Blood, either at the Nose, or of Wounds, and where there is no Fracture of the Bone, will heal.

The Royal Stiptick.

Upon four Ounces of Sympathetick Powder, affuse half an Ounce of good Oil of Vitriol; stir them well in a Glass Mortar, with a Pestle of the same, and let them stand twenty four Hours on warm Sand, in a wide-mouth'd Glass; Grind this Mixture again with a little Spirit of Wine, and put it in a Matras; pour upon it more Spirit of Wine, to make that already us'd, a Pint. Lute it well, and let it stand fourty eight Hours in Digestion, often shaking it; then let it stand to cool and settle, and decant the Spirit of Wine, which keep well stopt. Remove the Cucurbit or Matras, into a Sand Furnace; Lute on its Head

K 2 and

and Receiver, and drive over the Helm, all that will rise in the Third Degree, which also keep by it self ; Let all cool, and take out what is left in the bottom, powder it, and put it into a Cucurbit ; Pour upon it Distill'd Rain-Water one Pound ; set it on warm Sand fourty eight Hours, and shake it often ; then let it settle, decant, and keep it for Use.

The Impregnated Spirit and Water may be us'd apart, or mix'd ; and if you would add strength to the Mixture, you may put some of the Acid Spirit drawn off, after the Spirit of Wine was Decanted : But if you would make the best *Stiptick Powder*, put equal Parts of the Impregnated Spirit of Wine and Water, and Evaporate to Dryness.

It is both a *Powerful Stiptick*, and one of the best *Vulneraries* in the World.

Observations

Observations.

IN Calcination begin with a very gentle Fire, till the Vitriol is melted; then increase leisurely, till it begins to Crust about the sides of the Vessel; otherways you may crack the Pan, and the Liquor will run out; but after it is Coagulated about the sides of the Pan, you may increase the Fire boldly.

If the Vitriol be only Calcin'd to grey-ness (as some direct) it will Coagulate in the Pots, and become a hard Mass, so that the Fire (though never so vehement) is hindred from acting upon its Particles, by the Compactness of the Matter, and will never raise the full Strength of the Spirit in twenty Days time; therefore it ought to be Calcin'd to Redness, and beaten into Powder, and put in the Pots before it Attracts Air.

The *Gilla*, or (what we call) Salt of Vitriol, ought to be dissolved in no more Water than will keep it from Crystallizing whilst it stands to settle, *viz.* Two Pound, or Two Pound and a half of Water, to one Pound of Vitriol, and that Filter'd while it is warm.

Cathartick Salt of Vit. The Long Digestion is to make the more gross Metallick Part settle to the bottom; the better it is Separated from that Metallick Part, the less Emetick, and more Cathartick it is rendred. The Precipitate Matter, must by many Ablutions, be rendred Tastless, and gently dried.

Stiptick Water.

The Liquor left after the shooting of *Vitriolum Martis*, is both more Stiptick and Vulnerary (by its Impregnation with the Sulphur of *Mars*) than the Oil of Vitriol is of it self.

Spirit Vit. Dulcis.

If you Cohobate the Spirit. *Vitrioli Dulcis*, upon the black Residence left in the bottom of the Retort, it Exalts its Vertue.

Diaphoret. Spirit of Vitriol.

Let the Salt of Tartar be clean, and the Hart's Horn well burnt, and put not above one Ounce of the Dulcify'd Spirit of Vitriol to the Salt and Calx at a time.

Lapis Medicament.

The Vessel in which you make it must be three or four times bigger than will contain the Ingredients, by reason of the great Ebullition which will arise from the mingling of the Acid of Vitriol, and Distill'd Vinegar, with the Salt of Tartar, and Calx of Lead; but especially when you put in the *Cerus*, you must do it warily,

rily, and keep it down by continual stirring.

You must so expose it to the Sun, that *Sympathet.*
the Rain may not fall upon it, lest it *Powder.*
should wash it away. Some think it suf-
ficiently Calcin'd in six or seven Days,
exposing it only six or eight Hours in a
Day; but it has been observ'd, That it is
better perform'd by giving it thirty or
forty Days Sun.

I have known some direct the putting *The Royal*
of Distill'd Vinegar to the Dissolution of *Stiptick.*
Vitriol, to cause a Precipitation, but I
could never find so great a disagreement
between them as to be capable to effect it.
I fear such have either wrote after others,
or foisted in their own Conceits, with-
out consulting an Elaboratory, and it has
cost me much Time and Money to follow
them to no purpose.

C H A P. XII.

Of Sulphur, or Common
Brimstone.

IT is brought to us from Italy, and some of the *West-India-Islands*, being Generated of a Fat, Resinous Substance, full of an Acid, Vitriolick Spirit, as appears by its Spirit made with a Glass Vessel, resembling the shape of a Bell, from which it takes the Name of *Spirit of Sulphur per Campanum*, differing very little from that of Vitriol.

We have it in three Forms, *viz.*

First, *Sulphur Vive*, which come to us as it is dug out of the Earth, and valued at the dearest Price of the Three, for no other Reason, but that it is less Vendible than the other.

Secondly, *Mineral Rough Brimstone*, which by Melting is Separated from a great deal of Insignificant Earth, which the Sulphur contained.

Thirdly, That cast into small Rolls, commonly Sold by Grocers and Chandlers, which is said to be mix'd with Rosin, or some other Bituminous Substance, and

and by Experience found to be the worst sort for the making either Flowers or Oil; the rough Mineral Brimstone is the best, for the aforesaid Uses, as having less Earth than *Sulphur Vive*, and not being mixt with any Heterogeneous Particle.

Preparations of Sulphur.

Flowers of Sulphur.

TO make this to any Advantage, it must be Sublimed in an Arched Room, instead of a Glass or Earthen Receiver, and one, two, or three Hundred Weight (according to the Magnitude of the Room) may be put in at a time. You must have a great thick Iron Pan, called a Tampin, to put the Sulphur in, which must be placed immediately over the Grate, and about a third part of the Diameter of the Tampin left open above its brim, to suffer the Fumes to come into the Arch where they Condense into Flowers: The Arch ought to be at least eighteen, or twenty two Inches thick; and that Cramp'd together with Iron, to resist the Force of the Fumes.

If

If you design your Furnace to Sublime one hundred Weight of Flowers at a time, your Pan must be capable of holding one hundred and a quarter; your Arch five Foot high, three Foot broad, and five Foot long; and its inside and floor to be set with glas'd Tiles: In the end, or side of the Furnace, you must have a Door, which must be two Foot square; it must be strongly Barricado'd, and a little Hole in it of a quarter of an Inch Diameter, which must be exactly stop'd with a Plugg, by which you may know when all is Sublim'd: For when you think the Operation is almost at an end, pull out the Plugg, and if the Fume come not forcibly out, the Operation is over, but if you find a strong Fume, with some Noise, continue the Fire till all is over.

Then let all cool twenty four Hours, before the Door is opened, and then go in, and with a Wing, or clean Brush, wipe the Flowers into a heap, and take them out for use.

It may be made in less quantity in Vessels of another Form: A Description of both you will see in the Preceding Plate.

It is a good Pectoral Medicine, and us'd in other Physical Preparations.

Its *Dose* from ten Grains to a Scrupe.

The

The White Flowers of Sulphur.

TAKE Salt Petre fix'd with Charcole (as hereafter) half a Pound, or but four Ounces; of clean Mineral Sulphur, twice its quantity, grind and mix them well together, then put them into a Retort, and set it in a Sand Furnace; fit to it a Receiver, but Lute it not; make a gentle Fire under it, which gradually increase to the Third Degree, and so keep it till all the Flowers rise; which you will know by the upper Part of the Retort above the Sand, being clear.

Its Use and Dose is the same with the other. But some are of Opinion that it far exceeds the other Flowers in Vertue.

The Milk of Sulphur.

TAKE clean Salt of Tartar one Pound, of Flowers of Sulphur six Ounces; grind them well together in a Stone Mortar; then put them into a strong Earthen Pan, and add of Fountain-Water eight Pound: Set this Mixtire over some kindled Coles, and by degrees make it boil, till the Liquor is very red, which will

will require three or four Hours (as the Water wastes, supply it with new warm Water) Take it from the Fire, and before it is quite cold Filter it ; then drop into it Distill'd Vinegar, which will cause the red Liquor to be muddy, and a white Powder will Precipitate ; when the first Precipitation is fall'n, drop in more Vinegar, and so proceed till you see the Vinegar will not make the Liquor muddy any more. After this, let all settle, and by gentle Inclination pour off the Liquor ; Put Fountain-water to the Magistry ; stir it well about, and let it settle, pour it off as before, and so proceed with six or eight Lotions, till the Powder is Insipid, and free from its Urinous Taste.

Its *Operation* is the same of the Flowers. Its *Dose* from twenty Grains to three Scruples and a half.

The Milk of Sulphur, with Quick Lime.

Take one part Sulphur, and two parts of Quick Lime ; Grind them well together, put them into an Iron Kettle, with six Quarts of Water to every three Pounds of the Mixture, and boil

it till the Liquor be as red as Blood; strain it (whilst it is warm) into a Vessel, either of Glass or Earth, and let it stand to settle: What is not very clear Filter; but if it be clear, decant it into a glass Vessel, and drop into it some warm Urine, which will Precipitate the Dissolution: Wash it, as you did the former, and it answers to the same purposes.

Balsam of Sulphur, with Oil of Olive.

Take of the Flower of Sulphur four Ounces, Salad-Oil one Pound; Put them in a Pipkin which will contain about three times their Quantity; Set them over a Fire, and make the Matter to boil gently; keep it continually stirring with a wooden Spatula, for the space of an Hour and half, till it is quite cool, and put it up for Use.

It is given in Coughs, Colds, Astmeh's, and Wheesings, Ptilicks and Consumptions: And Externally to heal and dry Ulcers: It eases the Pains of the *Gout*.

Balsam

Balsam of Sulphur, with Oil of Turpentine.

Take four Ounces of Flower of Sulphur, and one Pound of Oil of Turpentine; Place the Mixtnre in a Sand Furnace, and stop the Matras loofly with another Glass; give a small Fire for one Hour, then increase it till the Oil boils gently, in which degree keep it three or four Hours: Then let it cool, and pour off the Impregnated Oil from that which is not dissolved.

It is a Nauseous, but an excellent Medicine for Ulcers of the Lungs.

Its Dose from five, to fifteen, or twenty Drops.

The Balsam of Sulphur, made with Oil of Anniseed, is perform'd after the same manner, and is more grateful to the Palate; also that with Oil of Amber, Juniper, &c.

Balsam of the Sulphur of Mars.

Take clean Filings of Iron, or broken Needles, one Pound; Put them into a Cucurbit, with Spirit of Salt five Pound; Let it stand in a Digestive Her

five or six Days; in which time the Iron will be almost all Dissolved; Filter and remove it into a Glass Retort; Place it in the Furnace, with a great deal of Sand about it; give Fire of the first Degree for one Hour, augment it to the Second, which continue till you cannot perceive any more Drops to fall: Then change the Receiver, and increase the Fire to the Third Degree, for one Hour, and so pass on to the Extremity of the Fourth, and keep it there four or five Hours, in which time you will have red Flowers ascend into the Neck of the Retort, and some yellow Spirit come into the Receiver. Let all cool, and remove the Vessels. In the Receiver you will have about four Ounces of a yellow Spirit: And (if you have proceeded regularly) about four Ounces of Foliated red Flowers in the Neck of the Retort. Take of the Flowers three Ounces, of the yellow Spirit one Ounce; Put them into a Matras; affuse upon them eight Ounces of Oil of Turpentine; Let them Digest upon warm Sand twenty four Hours; then augment the Fire, so as to make the Matter simper for two Hours. Let all cool, and put it carefully from the Fæces for Use.

I have heard it Affirm'd to be one of the best Vulneraries in the World, and seen wonderful Effects of it, both Internally and Externally.

It

It is given in all Distempers of the Breast and Lungs, the Stone, and Ulcers of the Reins; and all other Internal Ulcers whatever. It also Cicatrises and Heals External Ulcers to a Miracle.

Its Dose is from ten, to fifty or sixty Drops.

Liver of Sulphur.

Take Flower of Sulphur four Ounces, Pure Salt of Tartar two Ounces; Mix and melt them in an Earthen Dish; keep them stirring till they are as red as Blood, without any white Specks. Take it out of the Dish, and put it in a Glass close stopt.

Of this is made the Tincture, Syrup, and Vulnerary Balsam, as followeth.

Tincture of Sulphur.

Beat the Liver of Sulphur (while it is warm) in a warm Mortar; Put it presently into a Matras, and to four Ounces of the Liver, put one Pound of Spirit

Spirit of Wine; set them in Digestion twenty four Hours, and you will have a very Red Tincture, which put up in a Vial stopt for use.

It is given in all Distempers of the Lungs, and said to be a Preservative against Contagious and Pestilential Air.

Its Dose from fifteen to twenty five, or thirty Drops.

A Vulnerary Balsam of Sulphur.

Take of *Hepar Sulphuris* four Ounces, of *Aloes Succatrine* one Ounce and a half, and of *Myrrhe* one Ounce, all in fine Powder; Put them into an Earthen Pot, and pour upon them one Pound of Balsam of Turpentine, with two Drams of Saffron; set them over a gentle Fire in Sand, which increase by degrees, till the Oil simper, and the Ingredients are dissolved; then let them cool, and strain the Balsam through Flannel, into a Glass, which keep for use.

It is said to be one of the best of Balsams for the Cure of Wounds and Ulcers.

L

Oil

Oil of Sulphur by the Bell.

IT is made of the Yellow Mineral Sulphur: There is requir'd to this Operation two wooden Frames, one Earthen Dish, with a Hole in the middle, a flat Gally-pot, and an Earthen Poringe, to burn the Sulphur in, a wide-mouth'd Glass for a Receiver, and the Bell, or *Campane* Glas.

Set one of the wooden Frames upon two Bricks, and put the Dish, with the Hole in its middle, upon it, and the flat Gally-pot in the middle of the Dish, with the bottom upwards, upon which set the Poringe which contains the Sulphur. Support the second wooden Frame upon two Bricks more, as you did the first, in which Frame a Hole must be made, fit for the Bell-Glass to rest in, so that the Edges of the Bell be clear of the Wood.

When the Poringe (charged with Sulphur) is fitted, set the Sulphur on Fire with a red hot Iron; when it is all melted, stir it with a clean Tobacco-Pipe, or Iron-wire, to make it burn clear; then cover it with the Bell, and in three or four Hours time you will perceive the Oil to condense about the sides of the Bell, and drop into the Dish, and so into the Receiver.

When

When you perceive the Sulphur to burn dull, take off the Bell, and stir about the Sulphur with an Iron-wire, as before; then set the Glass again, and so proceed till you have as much Oil (or rather Spirit) of Sulphur, as you desire.

Its *Operation* is Diuretick, and it is given in Juleps, to give 'em an agreeable Acidity to qualifie the Heat in continued Fevers: Some ascribe greater Vertues to it, than is given to Oil of Vitriol; but I never could distinguish any difference more, than that one is the Vitriolic Spirit in Sulphur, and the other the Sulphureous Spirit of Vitriol.

Salt of Sulphur.

PUT four Ounces of *Sal Polychrestum*, Prepared as hereafter, in the Chapter of *Nitre*; Powder it in a Glass Mortar, with a Pestle of the same; Put it in a flat, wide-mouth'd Glass, and put to it two Ounces of Spirit of Sulphur; stir them well together with a clean Tobacco-Pipe, and set them in a gentle Heat of Sand to Evaporate; you will have a pleasant Acid Salt, which put up in a Vial for Use.

Its Operation is Diuretick and Cathartick.

Its Dose from one Scruple to one Dram and a half, in Broth, or any proper Vehicle. I have known it given to five or six Drams, and then it has given four or five Motions *per inferiora*, as most Salts will.

Observations.

Flower of Sulphur.

THE yellow, rough, Mineral Brimstone is best for this Operation; you may have it at the Refining-Brimstone-House in *Petticoat-Lane*. For the first twelve or sixteen Hours, give but gentle Fire, so much as to make the Fumes rise, but not to boil over.

White Flo. of Sulphur.

You may make use of Salt of Tartar, and Nitre powdered, mixt and melted in a Crucible, instead of fix'd Nitre, or Salt of Tartar; but you must not put into the Crucible above a Spoonful at a time, as you will see in the Chapter of Tartar.

Milk of Sulphur.

You ought to make the Precipitation in some place where the Noisome Scent has

has a good Conveiance, either in a large Chimney, or in the open Air; for though it is not dangerous, yet it is as Offensive as a stinking House of Office.

The Vessel ought not to be fill'd above *Balsam of Sulphur*, one third, least it should boil over, and take Fire with violence, and put you in *with Salad Oil*. Confusion. Have also a fit Cover to the Vessel ready, that you may smother it, if it should take Fire within the Pipkin.

This ought to be placed in a Chimney, *Balsam of Sulphur*, because the Steam which comes from it, is *with Oil of Turpentine Sulphur*, as offensive, as that in the Precipitation of

This might have been placed with the *Martial* *Martial* Preparations, but being a Sulphur, and of the Nature of these Medicines, I have given it here.

This Operation ought to be Perform'd *The Liver* in a Chimney: you must keep it, after it is melted, continually stirring, till it is red as Blood, and have a Cover ready to suppress the Flame if it should take Fire.

You ought to make the Liver of Sulphur into fine Powder, in a warm Mortar, and put it into the Matras as warm as possibly you can, before it Attracts any Air; then presently put the Spirit of Wine to it, and fit a Glass to the Mouth of the Cucurbit, Lute the Joint well, and set it to Digest.

L 3 The

The Vulner. The Pot in which you make this Balsam ought not to be fill'd above a third Sulphur. part ; carefully stir it when it begins to Heat, lest it should boil over, and take Fire, which it is apt to do ; have a Cover, and wet Clothes ready, against such an Accident.

Oil of Sul. After the Sulphur burns clear, and the *by the Bell.* Bell set over it begins to work, it will burn, and work well for five or six Hours, when the Flame begins to decrease, take off the Bell, and place it upon an Earthen Dish (which you must set by the Frame for that purpose) put in more Sulphur, and when it is all on Fire, stir it with a clean Pipe, and put on the Bell again ; and so continue till all the Sulphur you design for Spirit be burnt.

Salt of Sul. This is not really the Salt of Sulphur, but Nitre Fix'd by Sulphur, and afterwards Impregnated with its Spirit.

CHAP. XIII.

Of ARSNICK.

IT is a Juicy Combustible Mineral Substance, consisting of Sulphur, and Corrosive Salts; of which there are three sorts, *viz.* *Yellow Arsnick*, called *Orpiment*, *Red Arsnick*, called *Sandarach*, and the *White*, properly called *Arsnick*. It is made of the *Red*, by mixing equal parts of *Sandarach*, and *Common Salt*, and Subliming them together.

The *White* is most us'd in Physick, the *Yellow* less, and the *Red* very little. It is one of the most Pernicious of Poissons, and so great an Enemy to the Balsam of Life, that it produceth strange Symptoms, as Convulsions, Swoonings, Gripes, Vomitings, Palpitation of the Heart, Intollerable Heat and Thirst, with Mortification of the part where it comes.

*Preparations of Arsnick.**To Sublime Arsnick.*

THE common way is to mix equal Parts of Arsnick and Salt decrepitate, in fine Powder; Put them in a Matras, in a Sand Furnace, within a Chimney, stopping the Mouth of the Matras loosly with Cotton, or Paper; make a gentle Fire, which increase gradually to the third Degree, and so keep till all is Sublimed: Six or Seven Hours time will be sufficient to raise the Mixture of half a Pound of each. This you may repeat as often as you think convenient, every Sublimation separating the light, fuzy Flowers, and taking only the Crystaline part. This Sublimation cleanses it, but in my Opinion makes it the more Corrosive, by carrying up some of the sharp Spirit of Salt with it.

To Sublime Arsnick for Physical Use.

Take of the aforesaid Sublimate one Pound, put it in a Crucible; set it in a melting Furnace, in such a Fire as will just keep it melting, where con-

tinue

tinue it for two Hours, in which time a great deal of the most Corrosive Poisonous Part will be Exhal'd.

Let it cool, and that which remains in the Crucible make into Powder, and grind it with equal its weight of fine Filings of Iron; set them in a Sand Furnace to Sublime, as you did before, observing the same Degree of Fire, and space of time, proportionable to the quantity; Repeat this Operation twice more, every time separating the light Flower, and then you have a Sublimed Arsnick, pretty well freed from its Corrosive Poison, and fit for farther Preparation: Some have ventur'd to give the Infusion of this Arsnick inwardly, and say it is a great Antidote against Poison.

Its *Operation* is Emetick and Cathartick.

Its *Dose* from three to eight Grains, Infused in Wine.

Diaphoretick Arsnick.

Take of the aforesaid sweet Sublimate of Arsnick, four Ounces, bring it into fine Powder; put it into a Retort; put to it twelve Ounces of Spirit of Nitre;

tre; set it in a Sand Furnace; make to it a gentle Fire, which increase gradually to the third Degree, and so keep it till no Drop falls from the Nose of the Retort; let it cool, and take out, and grind the Arsnick again; put it in a new Retort, and put to it twelve Ounces more of fresh Spirit of Nitre; proceed, as you did before, to the third Degree of Fire; and when you perceive no Drop to fall from the Nose of the Retort, increase the Fire to the Fourth Degree, and so keep it for two Hours; then let all cool, take out the Medicine, which make into very subtle Powder; Put it in a Matras; put to it Tartaris'd Spirit of Wine half a Pound; Invert a fit Glass into the Mouth of the Matras, Lute well, and let it stand upon warm Sand twenty four Hours, often shaking it about; Take it from the Sand, let it settle, and decant the clear Spirit of Wine; Put to the Medicine half a Pound more of fresh Spirit of Wine, let it stand as before, twenty four Hours, then let cool, and when settled, decant; dry the Powder gently, and keep for Use.

Its *Operation* is Diaphoretick.

Its *Dose* from five to twenty five, or thirty Grains.

I remember it to have been often-times us'd with good success in the Plague, in the Year 1665.

Regulus

Regulus of Arsnick.

TAKE Arsnick eight Ounces, Salt of Tartar, made of Tartar, and Nitre, *ana* six Ounces, Filings of Steel four Ounces, Charcole-dust one Ounce; beat and mix them, and by a Spoonful at a time, put them into a red hot Crucible: when it is in, make a Fire all over it, and let the Matter stand in good Fusion half an Hour, then take it out, and pour it into a warm greas'd Cone, or Mortar, knocking it about the sides, to make the Regulus settle; you may purifie it as that of Antimony.

There is also a Regulus of Arsnick, made of Arsnick one Pound, Potashes six Ounces, and soft Soap one Pound; mix, and put in a Crucible, covered with another that has a Hole in it; and so bring it to Fusion gradually in a Melting Furnace.

Spirit and Butter of Arsnick.

TAKE Arsnick half a Pound, Mercury Sublimate one Pound; mix them well, and put them into a Retort; place it

it in a Sand Furnace ; Lute on its Receiver, and give it gradual Fire, as in the Butter of Antimony, and you will have a thin Fuming Spirit, and a Butter: When all is cold, take off the Receiver; pour the Spirit into a Glasf, which keep well stop'd, and the Butter you must keep by it self.

The Spirit some say will Radically dissolve Iron: the Butter is a great Canstick.

If you put on a new Receiver, after you have taken off the Spirit and Butter of Arsnick, urge the Fire strongly, and the Crude Mercury will distil in Drops, which serves for any use that other Quicksilver can be put to; there is no need of putting Water into the Recipient, the Mercury will Condense without it. And if you desire more Dissolving Spirit, put the Butter and Spirit into a new Retort, and Distil again; and by Repeating that Operation, you will make (almost) all the Butter into Spirit.

Arseni.

Arsenical Magnet.

TAKE of Crystaline Arsnick, Yellow Sulphur, and Crude Antimony, of each three Ounces ; These all made into Subtle Powder, and mixt, put them into a Retort ; Fit a Receiver without Luting, and give it gradual Fire to the Third Degree, where keep it three Hours ; augment the Fire to the Fourth, for an Hour more ; then let all cool, and in the bottom of the Retort you will find a Pellucid Mass, of a dark red Colour.

In the time of the *Plague*, 1665. I made this Magnet, and it was much us'd both in Plasters and Amulets.

Observations

*Observations.**Sublimate of Corrosive Arsnick.*

LE T all your Operations be Performed in a Chimney, that the Pernicious Fumes may freely ascend without Prejudice to the Operator; and when you grind the Arsnick, Muffle your Mouth and Nostrils.

Sublimate of Sweet Arsnick.

The Filings of Steel being an Alkali, absorbs the Corrosive Salt of Arsnick, and keeps it from Ascending with its more Sulphureous Part.

Diaphoret. Arsnick.

Put not above four Ounces of Spirit of Nitre at a time upon the Arsnick, and dispose the Mouth of the Retort so, that the Fumes may best go up the Chimney; when the Fumes are well wasted, put on four Ounces more of Spirit of Nitre; and so the third time.

Regulus of Sulphur.

When it is melted, and fit to take out of the Fire, let the Cone, or Mortar, be placed in the Chimney, so that you may keep from the Fumes it emits.

Spirit and Butter of Arsnick.

When the Butter is all rais'd, you may melt it down out of the Neck of the Retort into the Receiver, by holding a kindled Charcole under it, as you do in the

the Butter of Antimony ; then take off the Receiver, put on another, and Distil the running Mercury.

Some order it to be done in an Earthen Vessel, and kept stirring till it is well mix'd, and whilst soft, to form it into *Amulets* ; but to do it in a Retort is more safe from the obnoxionsness of the Fumes, and renders the *Magnet* as useful.

Magnet of Arwick.

CHAP

C H A P. XIV.

Of Salt Peter.

IT is a Salt, though Extracted out of the Earth, yet abundantly Impregnated with the Spirit of the Air. It also cleaves to Stone-Walls, Rocks, Clefts, and Caverns under Ground. That which is Extracted out of Fat Earth is made in most Countries of *Europe*; but our greatest Quantities come from the *East-Indis*.

It is Compos'd of near an equal quantity of Fix'd and Volatile Nitrous Airel Salts, bitterish in Taste: It is the Product of the Elements, deposited in the Bosome of the Earth, for the Generation and Nourishment of Vegetables, and may not improperly be call'd, The Universal and Un-specifick Mercury; which I shall leave to Quick and Fit Souls to Reflect and Philosophize further upon.

Purification of Salt Peter.

TAKE what Quantity you please of Nitre, dissolve it in warm Water; Filter, Evaporate, and Crystallize, as you do

do other Salts. This is an Operation not absolutely necessary amongst us, our Refiners of Salt Peter giving it well Purify'd to our Hands. Some esteem the Crystalline Nitre best, and others the Lump; but I could never observe any difference in them, the one being the top; and the Lump, the bottom of the Pan, in which the Nitrous Liquor was put to shoot.

Crystal Mineral.

Melt what quantity you please of Salt Peter in an Earthen Pot, or very clean Iron Kettle; When it is well melted, cast a little Flower of Sulphur upon it; when that is burnt, put on more, and so do till the Nitre flows clear as Rock-water, without any scum; then with a clean Iron or Brass Ladle, take it out of the Pot, and put it into a warm Brass Pan, or Mould; when that is Coagulated, put it by, and with the Ladle take out more; and so do till all the Melted Salt is cast, which keep for Use. It is also call'd *Sal Prunellæ*.

If you desire it yet more Pure, dissolve it in clean warm Water; Filter the Dis-
M solution,

solution, and Evaporate till a thin Skin appear upon its Surface; then set it to Crystallize; and this is call'd *Crystal Mineral*, or *Sal Prunellæ Crystallisatum*.

Its *Operation* is Diuretick and Cooling. Its given in *Fevers*, *Quinseys*, *Gonorrhœas*, and in *Pestilential Diseases*.

Its *Dose* from ten Grains to one Scruple, or half a Dram.

Sal Polychrestum.

MI X equal Parts of Sulphur and Nitre in fine Powder, and put them into a red hot Crucible, by a Spoonful at a time; as soon as the Flame of one Spoonful is consum'd, put in another, and so continue it till all your Mixture is in; put a Tile over the top, cover it all over with Coles, and keep it in Fusion four or five Hours, and then pour it into a warm Copper Vessel, and when cold, Powder and Dissolve it in warm Water; Filter the Dissolution, and Evaporate till it is dry.

If the Salt be not so white as you desire it, put it in a Crucible, and set it in a strong Fire three or four Hours longer,

con-

continually stirring it till it is very white. Then again Dissolve, Filter, and Coagulate, and you will have a pure *Sal Polychrestum*.

Its *Operation* is Cathartick and Diuretic.

Its *Dose* is from half a Drachm to one Ounce.

If to six Ounces of *Sal Polychrestum*, you put one Ounce of Sublimed *Sal Ammoniack*, and half an Ounce of *Sal Mirabilis Glauberi*, and then Dissolve, Filter, and Crystallize them together; the Composition will be much more agreeable, and better deserve the Name of *Polychrestum* than before.

The Purging Salt of Nitre.

PU T one Pound of Nitre in a Crucible, set it in a wind Furnace; give it gradual Fire till it melts; then put into it a live Charcole, about a quarter of an Inch Diameter, when it has done Flaming, put in another, and so continue to do till the Cole emits no Flame: This is call'd *Fix'd Nitre*; Pour this into a warm Mortar, beat it to Powder, and

M 2 dissolve

dissolve it in Distill'd Vinegar; Filter and Evaporate in a wide-mouth'd Glas; dissolve it again in fresh Distill'd Vinegar, Filter and Coagulate the third time; then dissolve it in high Rectify'd Spirit of Wine, which Distil from it, and you will have a Salt easie of Fusion, pleasant in Taste and Operation.

It is Cathartick and Diuretick, and opens Obstructions in all the chief Bowels.

Its *Dose* is from two Scruples, to four or five Drachms.

The Fix'd Nitre being Expos'd to the Air, dissolves into an Oil of Nitre, *per deliquium*.

Spirit of Nitre.

TAKE one Pound of Nitre in fine Powder, and four Pound of clean Tobacco-Pipes, or Fullers Earth, also beaten to fine Powder; mix them well, and put them into a good Earthen, or coated Glas Retort; place it in an open Furnace; Lute a Receiver, and kindle a Fire under it, which keep in the first Degree, till you see some reddish Fumes appear

appear in the Recipient; neither augment it till those Fumes disappear; then increase to the Second, which will raise more red Fumes; when they begin to decrease, raise it to the Third, and so on to the Fourth, and most Extream Degree of Fire, till no more Clouds come over; then let out the Fire, and as soon as it is cool enough, take off the Receiver, and put the Spirit in a Glass, with a Glass or Wax Stopple,

Its chief Use is to dissolve Metals, which it performs as well (and some think better) than *Aqua Fortis*.

Spirit of Salt Peter, with Oil of Vitriol, and the Sal Enixum of Paracelsus.

PUT one Pound of Salt Peter into a Glass Retort, and pour upon it one Pound of Oil of Vitriol; place the Mixture in a Sand Furnace; Lute on a Receiver, and give a Fire of the first Degree two Hours, advance to the Second, where keep it two Hours longer; and so to the Third and Fourth, giving two Hours to each Degree, in which time the Operation will be ended. When

M 3 all

all is cold, take off the Receiver, and put the Spirit in a Vial stopt with Wax, or a glas Stopple. This Spirit Answers all the ends of the former.

In the Retort you will find a white Mass of a pleasant Acid Taste.

Its *Operation* is Diuretick, and a powerful Opener of Obstructions.

Its *Dose* is from one Scruple to one Drachm, in Water-gruel, Broth, Water, or any other Vehicle.

The Sweet Spirit of Nitre.

PUT into a Retort of Spirit of Wine Tartaris'd, half a Pound, to which must be added four Ounces of Spirit of Nitre, by half an Ounce at a time; a crackling will ensue upon the Mixture, and when that is over, you may put in more, and so proceed till all is in; then shake them well together, and place the Retort in a Sand Furnace; Fit a Receiver, not Luted, or but slightly; make a Fire of the First Degree, proceed from thence to the Second; where keep it one Hour and a half; and then one Hour more of the Third will finish the Operation.

It is Diaphoretick and Diuretick; also a great Expeller of Wind, and Opener of Obstructions.

Its Dose is from ten Drops, to one hundred.

Single Aqua Fortis.

TAKE of Crude Vitriol three Pound, of Nitre two Pound; beat, and mix them well; put the Mixture into an Earthen Pot, call'd a long Neck, place it in an open Fire; fit to it a Receiver, which Lute well with Clay, Sand, and cut Flax, wrought together; give a Fire of the first Degree for three Hours; in that time you will see some red Fumes in the Receiver, which will again disappear; then raise the Fire to the Second Degree, where keep it three Hours longer; go on to the Third and Fourth, where keep it till the Receiver is free from Fumes. When all is cold, take the Receiver off carefully, and keep the Aqua Fortis for Use; which is chiefly for *Dyers* and *Refiners*, and is also a good *Menstruum* to be used in the Preparation of other Medicines.

M 4

Double

Double Aqua Fortis.

TAKE of Vitriol Calcin'd almost to Redness, four Pound, of Nitre two Pound, both made into fine Powder, and well mixt; Put the Mixture into an Earthen Long-neck, or Glaſs Retort Luted, set it in a Reverberatory Furnace; Fit and Lute on a Receiver to it; kindle the Fire, and proceed, as in the ſingle Aqua Fortis. Some mix Clay with the Calcin'd Vitriol and Nitre, but it is altogether unnecessary: And if you desire its *Caput Mortuum* wash'd, 'tis inconvenient.

Tincture of Salt Peter.

TAKE of Nitre fix'd with Charcole, as directed in the Purging Salt of Nitre, one Pound; put it into a Crucible, and give it a ſtrong melting Heat, for three or four Hours; then put it into a warm Mortar, powder it, and whileſt warm, pour upon it half a Pound of Tar taris'd Spirit of Wine; ſet the Mixture in a Matras, upon warm Sand, gradually increasing the Fire, till the Spirit of Wine ſimper; and ſo continue it two or three

three Hours, in which time the fix'd Nitre will have communicated its Tincture to the Spirit of Wine; Decant, and put on more, and Digest so long as it yields any Tincture.

Its *Operation* is Diaphoretick and Diuretick.

It Purifies the Blood, and is a great Antiscorbutick.

Its *Dose* is from twenty Drops to a Drachm.

Fulminating Powder.

IT is Composed of Nitre three Parts, Salt of Tartar two Parts, and Sulphur one part; mix them diligently, and keep the Powder dry for use.

Its *Operation* is Diaphoretick and Diuretick.

Its *Dose* is from ten Gr. to one Dram.

If you put one Dram of this Powder into a Spoon, Fire-shovel, or on the Point of a Knife, and hold it over a gentle Fire, half a quarter of an Hour, it will then begin to melt, and give a Report like a Musquet.

Observations

*Observations.**Sal Prunel.
or Crystal
Mineral.*

This differs not much from pure Nitre; the burning of Sulphur upon it, consumes some accidental Dirt, which may have fall'n into it; and Evaporates a little of its Humidity and Spirit; but whether this makes the Medicine more or less effectual, the Physician is the best Judge.

*Sal Poly-
chrestum.*

This ought to be made of pure Nitre, because what is impure, or of the nature of common Salt, fixes with the Medicine in its Preparation: which some (with good Reason) think not to answer the Intent of the Medicine.

*Nitrum
Cetariaic.*

You ought to dissolve the Fix'd Nitre so often in Vinegar, till it comes off as sharp in its Distillation from the Nitre, as it was when put to it.

Spir. Nitri

The Nitre for this Operation ought to be pure and dry; for if it be not Separated from the common Salt, which is in all our unrefined Nitre, it will produce an *Aqua Regia*. If it be not dry, it cannot be made into such fine Powder as is requisite to keep it from melting together.

ther, by which the Emission of its Spirits would be hindered.

This Spirit is made with less trouble *Spir. Nitri.* than the former, and to answer the *Ol. Vitrio.* Charge of the Oil of Vitriol, you have the Salt which some have observ'd to be endued with all the Vertues of *Tartarus Vitriolatus.*

For this Operation you need not take *Aq. Fortis* the trouble of making the Nitre so fine, *simplex.* as in the Spirit of Nitre, the Crude Vitriol and Nitre melting together in the Retort, sufficently mixes them.

The Nitre ought to be finely Powdered, *Aq. Fortis* the better to mix the Calcin'd Vitriol and Nitre, before they are put into *duplex.* the Retort, for the Reason recited in the Spirit of Nitre.

You may put the First and Second *Tinct. Sal.* Tinctures together in a Retort, and draw *Nitri.* off so much Spirit of Wine as is necessary to leave the remaining Spirit of Wine well charged with the Tincture.

Observe but the Proces, and no other *Spir. Nitri.* Caution is requir'd. *Dulcis.*

This

Pul. Fulminans. Let the Nitre, Salt of Tartar, and Sulphur, be all very dry, and grind them in a warm Mortar, with a warm Pestle. For if you let them Attract Air, it lessens the Crack.

Note, That in the Rectification of these, and all other Acid Spirits, the Flegm comes first; whereas in all Vinous and Urinous Spirits it comes last.

CHAP.

CHAP. XV.

Of Common Salt.

Common Salt is the Quintessential Part of Salt-Water, (*viz.*) of the Sea, or of Fountains, which remains after a full Evaporation of the insipid Humidity of the said *Marine*, or Fountain-Water. Of it there are three sorts (*viz.*) *Sal Gem*, so call'd from its Transparency, and similitude of Precious Stones; that made by Evaporation of the Water of Salt Fountains, and of Sea-water. The *Sal Gem* we have from the *North-East-Countries*, as *Poland*, &c. where there are large Rocks of it; the Fountain-Salt out of *Cheshire* and *Worcestershire*, and that of the Sea from all Parts of the World near the Sea, and of it there are two sorts, that made by Evaporation with Fuel, and that dried by the Sun, the last of which is the strongest. The *Sal Gem* is the most Penetrating, as appears by its Dissolving, and Volatilizing Gold, more powerfully than the other.

Purification

Purification of Salt.

IT is separated from its Earth, and accidental Dirt, by Dissolution, Filtration, and Crystallization.

Decrepitation of Salt.

PU T what quantity of common Salt you please into a Crucible, or any other Earthen Vessel which will endure the Fire; give it such a Heat as will make it crackle, but not melt; continue it in that Degree of Fire (now and then stirring it with an Iron Hook) till it cracks no more; and this you may do either before, or after Purification.

Spirit of Salt.

TAKE of common Salt one Pound and a half, of Burnt Tobacco-Pipes, or Fuller's Earth, four Pound and a half; let the Salt and Bole be well dried, and beaten into very fine Powder; then mix them exactly, and put them into an Earthen or Glass Retort Luted, which ought not

not to be quite two thirds full; place the Vessel in a Reverberatory Furnace; cover it with its Dome; Fit and Lute on a Receiver; make under it a Fire of the first Degree, and continue it about two Hours, in which time the Lute will be dry; then increase the Fire to the Second Degree, and continue it so three Hours, and so proceed to the Third, and there keep four Hours; urge it further to the Fourth, for five Hours longer; in which time (the Fire being exactly manag'd) the Operation will be ended, which you will perceive by the disappearance of the white Clouds in the Receiver; let it cool, and take off the Spirit.

Put the Spirit into a clean Cucurbit, or Retort; place it in Sand, in a gentle Heat, fit a Receiver, not Luted; give it a gentle Fire, to raise the insipid Flegm; when you perceive the Drops to have an acid Tast; put away that which is in the Receiver, which put on again, and Lute; keep it in a Fire of the Second Degree, till there is a Minutes space of time between the falling of each Drop. Then take off the Spirit, and keep for use: It is more grateful in Taste than it was before its Rectification.

In the Retort will be left the heavy Spirit of Salt, which is improperly call'd its

its Oil; which may also be Rectify'd, and rendred more grateful, by increasing the Fire to the Third and Fourth Degree, till nothing is left in the Retort, but a Stiptick Yellow Earth.

Its *Operation* is Diuretick, and is us'd in any Vehicle, to make it of a pleasant Acidity. It is given in Fevers, Obstructions of the Liver and Spleen, Dropsies, Jaundice, and to quench Thirst.

Its *Dose* is from ten, to sixty or seventy Drops.

*Spirit of Salt, made with Oil of
Vitriol, &c.*

TAKE of clean common Salt, two Pound, of Oil of Vitriol the same quantity, and mix them thus. First put the Water into an Earthen Vessel; then put the Oil to it by two or three Ounces at a time; if you put in more it will endanger breaking the Vessel by its violent Heat.

Then put the Salt into a Glass Retort, and put the Oil and Water to it; set it in a Sand Furnace; Fit a Receiver to it, and make a Fire of the First Degree for one Hour, and advance to the Second; where keep it three Hours; increase to the

the Third four Hours, and so to the Fourth, till no more Fumes or Drops come into the Receiver. This Spirit (without any Rectification) is more grateful than the former, and equal, if not exceeding it in Vertue.

Sal Mirabile.

TAKE the Salt left in the Retort, after the Distillation of the aforesaid Spirit of Salt; Dissolve and Filter it; Evaporate part of the Water, and set the other in a cold place to Crystallize. In cold Weather it will Shoot in Forty Eight Hours, and in warm Weather three or four Days.

Its *Operation* is Cathartick and Diuretick, and Answers all the Uses of any of the Purging Waters.

Its *Dose* from half an Ounce to an Ounce, in a Pint of Purging or Spring-Water.

N

Spirit

Spirit of Sal Gem.

Spirit of Sal Gem is made in every respect as that of common Salt, either with Bole, or Oil of Vitriol.

Its Use and Vertues are the same as Common Salt, but 'tis a more powerful Dissolver of Gold.

Observations.

Spirit Salt com. **Y**OU may put one part of Crude Tobacco-Pipe-Clay, to two Parts of Bole, and work it well with the Bole or Clay moist ; make it into little Pellets, which dry, and then Distil, as you are directed.

Spirit. Sal. cum Ol. Vit. About the middle of this Distillation the Matter in the Retort will bubble and make a noise, then be careful that you do not augment the Fire too fast, least the Retort or Receiver breaks.

Sal Mirab. If the Retort perform the Operation without cracking, you may put Water to the Salt which is in it, and Dissolve and Filter, and so save the Retort. The Evaporation may be made in a clean Iron Kettle, or an Earthen one. CHAP.

CHAP. XVI.

Of A M B E R.

IT is suppos'd to be a Bituminous Juice and Roli of the Earth, soft and viscid; for in it we often find Flies, Ants, &c. It is call'd *Amber*, *Succinum*, *Carabe*, and *Gleßum*. It is found in the *Perſian Gulph*, on the *Italian Shore*; also in the *Currents* near the *Baltick Sea*, in the *Dutchy of Prussia*. It is of different Colours, *viz.* White, Yellow and Black: But thoſe who work it into Beads, and other things, make a Distinction of twenty or thirty sorts.

The White is most esteem'd in *Physical Use*, as being best Digested, and of the most Odoriferous Smell, containing the greatest quantity of Volatile Salt. The Yellow is next in goodness, and most valued by the Amber-workers, by reaſon of its Transparency. The Black is leaſt in esteem. *Amber*, by agitation, sends forth an agreeable Smell, and being ground into fine Powder, is given in *Gonorrhœa's*, Spitting of Blood, the Bloody Flux, and the Immoderate Flux of the Hemorrhoids, Terms, &c. also to stop the Violence of Catarrhs, if the Fume of it be received up the Nose.

It is found in pieces of different sizes, from the bigness of a great Pin's Head, to those of five, six, or seven Inches Diameter; the greater Pieces are wrought into Cabinets, Cups, and several Figures, and are valued according to their Bigness and Transparency.

That we meet withal in the Shops, is by the Druggists generally disposed into two sorts, by separating the White and Yellow Pieces, from those that are full of Scurf and Black, which they distinguish by the Names of Fine and Course Amber: The Fine Levigated is for Physical Use, and the Course for Distillation.

Preparations of Amber.

Oil, Volatile Salt, and Spirit of Amber.

Take of course Amber in fine Powder one Pound, of Tobacco-Pipes, Bricks, Sand, or other Bole, also in fine Powder, three Pound; mix them well, and with the Mixture fill a Retort half full; set it in a Sand Furnace; fit to it a Receiver (not Luted) make Fire of the first Degree for one Hour, increase it to the Second, and so keep it two Hours; then to the Third, in which keep it four Hours.

In

In the first Degree some of the Acid Water we call Spirit, with a little of the finest Oil will Distil. In the Second, the Spirit and Oil will continue dropping, and some of its Volatile Salt will rise into the Neck of the Retort. In the Third, you will elevate more Salt with the Balsamick Oil ; and if you will urge the Fire to the Fourth Degree, it will raise its thick Balsam. As the Salt rises into the Neck of the Retort, you ought to scrape it out with a clean flat Stick, and put it upon brown Paper to suck up the Oil : The Salt, by this means, will be white, and if you desire it more fine, you may Dissolve, Filter, and Evaporate it, and you will have a very white Salt. When the Distillation is over, and all cool, Separate the Oil and Spirit, by a Funnel, or other Separating Glafs. If you would Rectifie the Oil, you may put it into a long bodied Retort, and set it in Sand, and by gradual raising the Fire to the Second Degree, there will Distil a fine yellow, and clear Oil. But if you would have a pure white, and $\text{\textit{A}}\text{\textit{etherial}}$ Oil, you must put it into a Cucurbit, with three times the quantity of Water to that of Oil, with which the Vessel must not be quite half full, and then fit on the Head and Receiver, and gradually bring up the Fire to the Second Degree, or so as to make the Oil and Water bubble, and you will

N 3 Distill

Distil a pure Ætherial Oil, which must be separated as before. Separate the Water from the Oil left in the Retort, and you will find it Impregnated with some of the Salt, and therefore put it into the Receiver, into which you made the First Distillation, and shake it well, to rinse out the Salt. Then pour all into a Cucurbit; fit to it a Head and Receiver; give a gentle Fire to Evaporate the Water, till the Drops fall a little Acid; then let it cool, and put it to the Spirit which you separated in the first Distillation; Rectifie them together, and you have the Spirit of Amber.

The *Operation* of the Oils, Spirit and Salt, is Diaphoretick and Diuretick.

The *Dose* of the Rectify'd Oils is from one to twelve, or fifteen Drops; of the Unrectify'd Oil from one to six or seven Drops. The *Dose* of the Spirit is from ten Drops to one Drachm; and that of the Salt from two Grains to one Scruple.

The Rectify'd Oil is given in Hysterical Distempers, in the Palsie, Apoplexy, and Epilepsie: The Salt and Spirit is given in the Stone and Gravel in the Kidnies and Bladder, Stoppage of Urine, Ulcers in the Neck of the Bladder, &c. The Balsamick Oil is most us'd externally, but often given, with good success, in old Gleets, a Disease which frequently puzzles the best Physicians.

Tincture

Tincture of Amber.

PUT Four Ounces of Amber in very fine Powder, into a Boult-head, powr upon it Twelve Ounces of Spirit of Wine, invert a small Boult-head into the Mouth of the bigger, lute well the Juncture, and set it to digest upon a heat of Sand four or five days, shaking it about two or three times in a day ; when the Spirit is well tinged of an Amber Colour, powr it into a Vial, and put half a pound more of Spirit of Wine, digest as before, which also will extract a Tincture, both which put into a Matras, and in a gentle heat of Ashes, draw off one half of the Spirit of Wine, which will serve again for the same Use ; and put the Tincture into a Vial well stopt.

Its *Operation* is a little Diaphoretick ; it is given to Hysterical Women, and is good for the Apoplexy, Palfie and Epilepsie.

Its *Dose* from Ten to Seventy or Eighty *Drops* in any proper Vehicle.

The Powers of Amber.

Take Oil of Amber one Ounce, the volatile Salt of Sal Armoniac half an Ounce, grind the Oil and Salt well together in a little Mortar, powr to them Spirit of Wine Tartariz'd half a pound, and put them afterwards into a bolt-head, invert a little Glass to make it fit for Circulation. Lute well the Joint, and put it on warm Sand to stand in Digestion four or five days, shaking it two or three times every Day, in which time the Spirit of Wine will have imbib'd the Oil and Salt; set it by, and when 'tis cold, put it in a Vial, well stopt, and keep for Use.

Its *Operation* is Diaphoretick and Diuretick. It is of the same Use with Oil, Spirit, and Salt of Amber, and is an Excellent Medicine against the Cholick in Stomach or Bowels.

Its *Dose* from ten Drops to half a Dra. or two Scruples.

Observations

Observations.

THE Oil, Spirit, Salt and Tincture, require no other Remarks than what is given in the Processes: And if you put the Salt of *Sal Volatile Oleofum*, instead of the *Sal Volatile Armoniacum*, it will be more acceptable to some Persons.

CHAP.

C H A P. XVII.

Of C O R A L.

IT is a Petrify'd Plant, which shoots out from Rocks in the bottom of the Sea: There are three sorts of it, *viz.* *Red*, *White*, and *Black*. The *Red* is most in Esteem and Use; the *White* next; but of the *Black* I have never met with any Preparation: The *Red* is found in the Seas of the *East-India's*, and the *Mediterranean*: Some say 'tis Green and Soft under Water, and by the Air is presently turn'd Red and hard; the *Black* is often upon the same Branch with the *Red*: The *White* is found in the *West-Indian-Sea*, upon the Coast of *Spain*, and in the West of *England*, upon the Coast of *Cornwal*. The Chymical Preparations of the *Red* are the Tincture, Magistery, and Salt; and of the *White*, the Magistery and Salt. But some prefer the Use of Coral brought into an Impalpable Powder, by grinding only, before any other Preparation whatsoever.

Preparations

Preparations of Coral.

Salt and Magistery of Coral.

TAKE what quantity you please of red or white *Coral* in fine Powder, put it in a clean, smooth Earthen Dish, or wide-mouth'd Glas; Mix with it di-still'd Vinegar, and there will arise presently a strong Ebullition: when it is over, put more Distill'd Vinegar to it; and so continue to do as long as you perceive any Fermentation; then set it upon warm Sand, stirring it now and then with a clean Tobacco-Pipe, till you see the heat excites no Effervescent; then filter the Liquor, put by the moiety of it for the Magistery, and the other part evaporate to dryness in a gentle heat, which is the Salt of *Coral*.

Its *Operation* is *Diaphoretiek* and *Diuretic*; and is said to revive and fortifie the heart; stop Bloody-Fluxes, and all other Hæmorrhagies, and to resist Poyson.

Its *Dose* from ten Grains to one Dram.

Upon the other part of the Liquor, drop Oil of Tartar *per deliquium*, upon which will arise a White Curd, and will in

in a little time precipitate to the bottom; when the Liquor is clear drop in more; and if it turns the Liquor white as before, let it settle, and so continue till the Liquor will not curdle by the Oil of Tartar; when the *Magistry* is all settled, decant the Liquor, and put clean Water to the *Magistry*; shake it about, let it settle and decant as before, and so do five or six times, till the *Magistry* has lost all its Salt Taste; dry it gently, and keep it for use.

It is endued with the same Vertues with the Salt.

Its *Dose* may be augmented to Four Scruples.

The Tincture of Coral.

IT is made several ways, and with divers *Menstruums*, which by time and heat, becoming red, it is thought (with good reason) that the Tincture proceeds more from the Spirits than from the Coral; I will therefore give you one, which I think to be the most genuine Tincture of Coral.

Reduce half a Pound of Red Coral into impalpable Powder, and mix it with equal its weight of sublimed Sal Armoniack also in *Powder*; put the Mixture into

to a Retort ; which place in Sand ; fit to it a Receiver, and having well Luted the Junctures, make Fire of the first degree, one hour ; proceed to the second, which continue two hours ; go on to the third, and keep it there three Hours, or 'till all the Sal Armoniack is Sublimed. It will be Tinged with variety of Colours, as Red, Green, Blue, &c. and contain in it the true Tincture of Coral, which is apparent by its Body, being left White in the bottom of the Retort. Put all these Sublimed Flowers into a Matras, and to every four Ounces of the Flowers put ten Ounces of Tartaris'd Spirit of Wine ; set them upon warm Sand, in a double Vessel to digest, for three or four Days, and shake them every Day two or three times ; when the Spirit of Wine is well tinged, put on more, and let it stand as before : Then put the tinged Spirits together (being twenty Ounces) in a Matras ; draw off twelve or fourteen Ounces, and the six or eight remaining will be deeply Tinged with the Sulphur of Coral.

Its *Operation* is Diaphoretick and Diuretick.

Its *Dose* from ten Drops to one Dram.

Observations

*Observations.**Sal Coral.*

Make the Evaporation in a Glass Vessel, with a wide Mouth, and in a gentle Heat of Sand ; the Earth will suck up a great deal of Salt, and too strong a Heat will discolour it.

Magist. Corallij.

When it is well settled, and washt sweet, you may drop it upon a clean Chalk stone, to absorb the Humidity, and then dry it further between Paper in the shade.

Tinct. Cor. al.

The Sal Armon. ought to be prepared by Dissolution and Sublimation ; so that no heterogeneous Matter may be elevated with the genuine Sulphur of Coral.

CHAP.

CHAP. XVIII.

Of Japan Earth.

IT is brought from Japan, and by the Natives call'd *Catechu*, in Colour and Weight it differs; some make nine or ten distinct sorts of it; But be it of what Colour it will, that which is lightest, breaks smooth, and is most stiptick on the Tongue is best; in Taste it is something bitter, but not unpleasant, prepares the Pallate to receive Wine with much pleasure: There is several Compositions of it made into Troches, that most in esteem is called *Catechu*; it is good against Catarrhs, Fluxes of Rheum, the Flux of the Bowels, and over-flowing of Terms, &c.

Catechu.

MAKE what quantity you please of Japan Earth into Powder; dissolve it in weak Cinamon Water; powr off the dissolution from the Fœces, and dry it gently; when 'tis dry, mix two Ounces of it with three Ounces of Sugar Candy,
Am-

Ambergreece half an ^{drachm} Ounce, Musk fifteen Grains; and Butter, or (as they call it) Spirit of Roses fifteen Drops; grind them all extreamly well together till they are impalpable, and with the Mucilage of Gum Tragacanth, make them into little Pills of the bigness of Pearl Barley.

One of these Pills held in the Mouth, causes a sweet Breath, and renders all Liquors very pallatable; forty or fifty of them dissolv'd in the Mouth, and swallowed in a day, helps Catarrhs, Fluxes of Rheum, the Bloody-flux, and overflowing of the Tears.

The Tincture of Japan Earth.

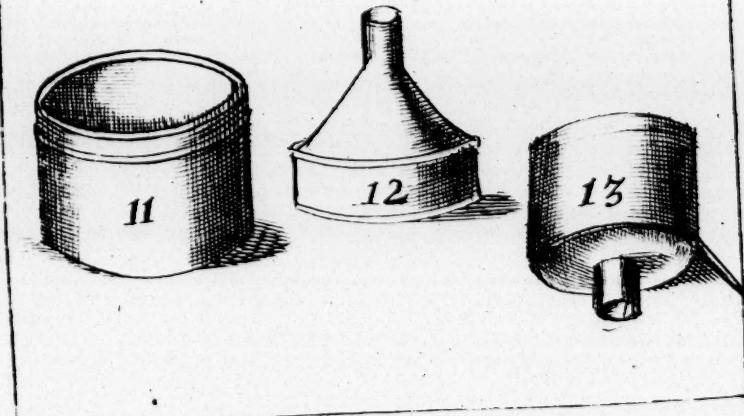
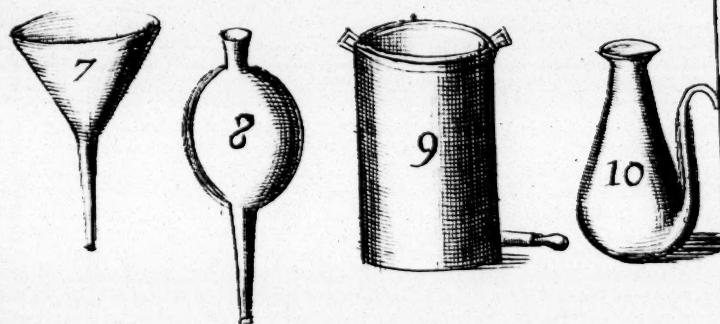
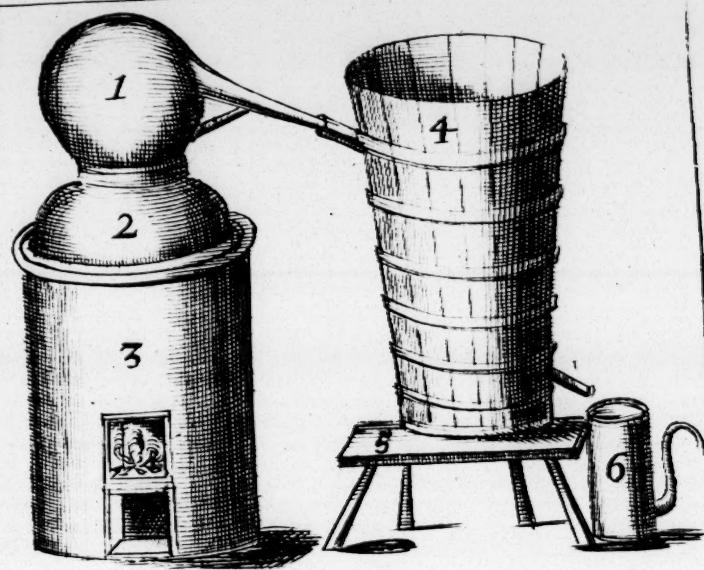
Powder finely four ounces of Japan Earth. Of the best Cinamon one ounce, of the Peruvian Bark one ounce and an half, let them be made also into fine Powder, with Musk and Ambergreece, *ana* six Grains; let the two last be well ground with one ounce of *Sugar Candy*; Put them all in a Matras, and put to them *Spirit of Wine* twenty four ounces; make of the Matras a circulating Vessel; lute well the Juncture; set it upon warm Sand to digest four or five days, shaking it about two or three times a day; then set it by to

to settle, and by gentle inclination powr
it into a Vial, and keep for Use.

It is good for all the fore-mention'd
Purposes, and also an excellent Antife-
brifick.

Its *Dose* from half a Spoonful to three
or four, in Wine, or any other proper
Vehicle.

These need no other Observation than
adhering to the Processes.



The Explanation of the Figures.

- 1 *The Head, of Copper or Pewter.*
- 2 *The Copper-Still.*
- 3 *The Body of the Furnace.*
- 4 *The Tub, or Refrigeratory, which contains the Worm and Water.*
- 5 *The Supporter of the Tub.*
- 6 *A Vessel of Glass or Pewter, call'd a Spout Receiver.*
- 7 *A Glass Funnel.*
- 8 *A Separating Glass.*
- 9 *Another Separating Glass with a Tap.*
- 10 *A Glass Spout Receiver.*
- 11 *The Body of the Balneum, to fit into the Mouth of the Copper-Still.*
- 12 *The upper Part of the Balneum.*
- 13 *The Head of the Balneum, with its Bucket, or Refrigeratory.*

A

Compleat Course
O F
Chymistry.

P A R T II.

C H A P. I.

of V E G E T A B L E S.

ALL Plants proceed from Seed, in which they are for some time shut up, as in a Matrix, 'till the Saline Humidity of the Earth and Fire has Penetrated and Softened the outer Part of the Seed, enter'd its Pores, and given Extention to the young Plant, by which its parts become perceptible.

O 2

Plants

Plants are Nourished by their Roots, which receive their Nutriment by Pores, and are afterward Exalted by the Heat of the Sun, which distributes it self into the Fibres of the Plant, and causes such a Filtration and Circulation of the Juices, as gives Nourishment to the Vegetable Parts ; the most Exalted and Subtle Parts whereof ascend to the Flowers and Fruit, the more Aqueous and less rarify'd, give Nourishment to the Leaves and Branches. From the more Oily Part proceeds Gums, and Resins ; and of the more Gross and Terrestrial is Compos'd the Bark.

CHAP

CHAP. II.

Of J A L A P.

IT is a Root brought to us from *America*, sliced and dried ; that which is most Ponderous, and breaks with shining black Resinous Veins is best. It is a great Cathartick, and as they say, Purges watry Humours : The Powder of it is given in White-Wine, from ten Grains to one Dram.

Resin of Jalap.

TAKE of Select Jalap one Pound, Powder it, and put it into a Matras ; put to it six Pound of Rectify'd Spirit of Wine ; invert a Bolt-Head, and Lute it ; set it upon warm Sand three or four Days, and shake it every Day two or three times ; when the Spirit is well Tinged, decant it carefully through a Hair Sieve into a Cucurbit ; set it in a gentle Heat of Sand, or Balneo, and draw off the Spirit of Wine to one Pint, which you may return upon the Jalap, to make a second Extraction ; Decant

O 3 the

the Spirit as formerly ; Lute on its Head and Receiver, and Distil as before. Let all cool, and in the Cucurbit you will find the Resin in Form of Turpentine, which wash in three or four Waters, and in a gentle Heat dry it, till it will beat into Powder.

Its *Operation* is Cathartick.

It is given to open Obstructions, and in Dropesies, made into Pills, or an Electuary.

Its *Dose* from three, to ten or twelve Grains.

C H A P. III.

Of R H U B A R B.

IT is a Purgative Root brought to us from *Turkey* and the *East-India's*; it is the Product of some Parts of *China* and *Tartary*. The most Compact (not Flinty) which cuts in Grains like Nutmegs, and of a pleasant Flavour, is best. And observe, that generally the small Pieces exceed the great ones in Goodness, as being less subject to Corruption; after

its

its Purgative Operation is over, it Binds, and is therefore given in Fluxes.

Its *Dose* is from ten Grains to sixty or seventy.

Extract of Rhubarb.

BRUISE, or cut into very thin Slices, what quantity of Rhubarb you please; steep it ten or twelve Hours in a sufficient quantity of Distilled Rain Water, or any proper simple Distill'd Water; let it just limper, and then pass it through a Strainer; infuse the Remainder in more Water, as before; pass and press it hard through the Strainer; put the Infusions together, and let them settle; then, by gentle Inclination, pour off the clear Tincture from its Residence, and Evaporate to the Consistence of Honey, and it is the *Extract of Rhubarb.*

Observations.

THese Extracts made with Water are apt to grow mouldy; therefore if you intend to keep them long, they ought to be made with Spirit of Wine.

O 4 After

After the same manner are all Vegetable Extracts made, except Resins, which require Spirit of Wine to dissolve them: Also observe, when you make the Extract of any Aromatick Herb, Flower, or Spice, that instead of Evaporation, you Distil the Water, and save it for Use, &c.

C H A P. IV.

Of G U I A C U M.

Guiacum is the Wood we call *Lignum Sanctum*, and *Lignum Vitæ*: It grows in several places of the *West India's*, and is a Tree of great Magnitude. It is Sudorifick, and therefore us'd in such Decoctions. That which is most Compact, Resinous, and Ponderous, is best. Its *Gum* is both Sudorifick and Cathartick.

Spirit

Spirit and Oil of Guiacum.

FILL an Earthen Retort two thirds full of such Dust of Guiacum as you have at the Turners; Place it in a Reverberatory, and Lute to it a Receiver; give it Fire of the first Degree one Hour, increase it to the Second, and keep it there two or three Hours; go on to the Third two Hours; and so to the Fourth for two Hours more; or until you see no more Fumes will come into the Receiver: Let it cool, and take off what is Distill'd, and put it into a Coffin of Filtring Paper, in a Funnel; the Spirit will Filter through the Paper, and the Oil will remain in it: Put the Spirit into a Glass Retort; set it in a Sand Furnace; Fit on its Receiver, and give it Fire of the First Degree, to raise the Flegm; when you perceive the Drops to come Acid, remove the Receiver, and put away the Flegm as useless: Put on the Receiver again, and Lute it, increasing the Fire gradually to the Second and Third Degree, and it will bring over all the Spirit, which put in a Vial for Use.

The Oil may be Rectify'd in a Retort, but 'tis generally us'd for the Tooth-ach, and

and to clean Rotten Bones, without Rectification.

Its *Operation* is Diaphoretick.

Its *Dose* is from two, to eight or ten Drops.

The Spirit is Diaphoretick and Diuretick.

Its *Dose* from twenty Drops to sixty, or seventy.

You may Calcine the *Caput Mortuum* to a white Ash, and then with warm Water Extract the Salt, as you will see hereafter of other Vegetable Fix'd Salts.

CHAP: V.

Of Sassafras.

IT is a Tree affording good Timber: It grows in several of our Western Plantations; especially in *Virginia*, from whence we have it. Its Root is more Fragrant than the Tree; and therefore it is most us'd in Physical cases. The Bark of both the Tree and Root is more Fragrant than the Wood of either, and yields more Oil considerably.

Oil of Sassafras.

TAKE of the Shavings, or the Wood ground to Powder, twenty eight Pound; Put it into a Copper Still, to which put of clean Water twelve Gallons: Lute on the Head, and set a Spout Receiver to the Worm; make a gradual Fire, till it runs in a small thred into the Receiver; in which condition keep it, till by holding a Spoon under the Nose of the Worm, you perceive no Oil to Distil with the Water; when the Operation is ended, separate the Oil which sinks to the bottom, and put it up.

Its *Operation* is Diaphoretick and Diuretick. It is given in the Venerial Disease, Gout, Stone, Scurvy and Dropsie.

Its *Dose* from three, to ten or twelve Drops.

After the same manner you make the Oils of Rhodium, Cinnamon, Cloves, Clove-bark, all Aromatick Herbs, and Seeds; and therefore I will not trouble you with any other Process of this kind.

C H A P. VI.

Of the Jesuits, or Peruvian Bark.

IT was brought to us from *Peru*, in *New Spain*, and its Use first taught us by the Jesuits: There has been for some Years two sorts of it (*viz.*) the Cultivated and the Wild: The Cultivated is the best, and the best of that kind is that which is most Compact, Bitter, and of a reddish Colour.

It is a certain Remedy to hinder the Fits of an Ague, and is given either in Powder, or infused in Wine: the Patient being well Purged before.

The Infusion of Peruvian Bark.

TAKE of the Bark in Powder two Ounces; Put it in a Matras, and to it two Quarts of White, or Pale Red Wine; Fit the Matras for Circulation, and set it upon warm Sand, or in Balneo, fourty eight Hours; shake it about two or

or three times a Day, then let it cool, and pour off the Infusion (through a Strainer) into a Vial, and keep it stopt for Use.

Two or three Ounces of this Infusion is given three or four times a Day in Agues, at some distance from the *Paroxism*. Dr. Smith of *Paris* (who was Sir *Robert Tabor*'s Successor there) made his Infusion in Pale Red Wine.

The Tincture of Peruvian Bark.

TAKE four Ounces of the Bark in Powder; put it in a Bolt-Head; put to it Tartaris'd Spirit of Wine twelve Ounces: Invert another less into the Mouth, to make it a double Vessel; set it in a gentle Heat of Sand, *Balneo*, or *Bal. Vap.* four or five Days, shaking it every Day two or three times; then Decant the Tinged Spirit of Wine carefully into a Vial, which keep for Use.

Its *Dose* from one Scruple to one Dram, or one Dram and a half, to be given in any convenient Vehicle, as a *Febrifuge*, some distance from the Fit.

The

The Extract of Peruvian Bark.

PU T half a Pound of Peruvian Bark in Powder, into a large Matras; Put to it of the simple Distill'd Water of Wormwood, Carduus, or any other proper Water, five or six Quarts. Place it in Sand, and let it boil gently two or three Hours; strain it; put more Distill'd Water to the Bark; Boil and Strain as before; Put the Infusions together, and in a Glas or Earthen Vessel, Evaporate gently, to the Consistence of Honey. Put this Extract in a Pot for Use.

Its *Dose* is from fifteen Grains to two Scruples, in Pills, or Dissolved in Wine.

It is Endued with the same Vertues as the former.

CHAP. VII.

Of SUGAR.

IT is the Essential Salt of a Reed which grows in the *East* and *West-India's*; That from *Brasile*, brought into *Europe* by the *Portugals*, is accounted the best, which is called *Brasile*, or *Lisbon* Sugar; but that which now we have from *Barbadoes* and *Jamaica* is very good, and by the Refiners of Sugar made equal to any other in Goodness. It is Refined by Dissolution, and the Separation of its Earthy, Gross, Oily and Molosus Part: That which is made most white and acceptable to the Eye, is Refined by the help of Lime-water, and being Evaporated to a due Consistence, is put into Moulds, of a Pyramidal Form, with a hole in the bottom, to let the more Feculent Part run out.

Sugar-Candy is made of both Refined, and Unrefined Sugar, by boiling of them in Water, and setting them to Crystallize in Vessels, in which they put little Sticks for the Crystals to adhere to. The White

White Candy is of the Refined Sugar, and the Brown of the Unrefined.

Sugar-Candy is counted a good *Pectoral*, and given in Diseases of the Breast and Lungs.

Spirit of Sugar.

TO one Pound of Powdered Sugar, put three Pound of Fullers Earth, also in Powder, or in its room, so much Sand clean washt; fill a Retort half full of this Mixture; place it in a Sand Furnace, and give it Fire of the first degree, for two Hours; then increase it to the Second for two Hours more; proceed to the Third, where keep it till no Fumes appear in the Receiver. Then let all cool, and in the Receiver you will find a Foetid Spirit and Oil, which separate as usual. Put the Spirit into a Retort, or Cucurbit; set to it a Receiver un-luted, make Fire of the first Degree; and there keep it till you perceive the Drops have a little Acidity; put away the Flegm; Lute on the Receiver; increase the Fire to the Second Degree; where keep it till all is come off.

It dissolves Pearl and Coral, and is also counted a good Medicine in the Stone and Gravel in the Bladder or Kidnies.

Its *Dose* is from ten, to fifty or sixty Drops, in any appropriated Liquor.

The Compound Spirit of Sugar-Candy.

TAKE Sugar-Candy (white or brown) half a Pound, of Sal Armoniack four Ounces, both made into fine Powder, and well mixt; put them into a Retort, which must be two Thirds empty; place it in a Sand Furnace, and make Fire of the first Degree for an Hour; increase it to the Second, and there continue it as long as the Drops fall at the distance of one Second of Time; proceed then to the third Degree, and let it remain there till no more Fumes appear in the Receiver: In it you will find an Empyreumatical Spirit, with a little Oil; take out this Spirit and Oil; put them in a clean Retort, and Rectifie in a gentle Fire of Sand, leaving the Oil in the bottom of the Vessel, and you will have a clear Spirit, more agreeable than that of the first Distillation.

It is more Aperitive than the former, and its Use and Dose the same.

The Ardent Spirit of Sugar.

Take coarse Sugar, or Molasses, q. v. put to it ten or twelve times its weight of Water, and let them stand a sufficient time to Ferment; as soon as the Fermentation is over, put the Liquor into a Copper-Still, with its Refegetatory, and give it gradual Fire till it begins to drop: Observe then so to manage the Fire, that the Spirit come from the Mouth of the Worm in a small thred; and so continue till that which Distils is insipid; then let out the Fire, and Rectifie the Spirit by a Second Distillation, either in a Glafs Body and Head, or (if your quantity be great) in a Copper Vesica; observing to separate the Spirit from the Flegm, as in the first Distillation, which may be farther Rectified till it burns all away.

It is of the same Use with Spirit of Wine, and is preferable next to that of the Grape.

Observations

Observations.

THE Sand, or other Bole, is mixt with the Sugar, to hinder its boiling over.

The Vessel in which you Distil it ought to be at least half empty.

The insipid Water which comes over in the Rectification ought to be kept by it self, changing the Receiver as soon as you perceive the Drops which fall, to be of an Acid Taste.

If you put a tenth Part of Dulcify'd Spirit of Salt, to the Spirit of Honey, or Sugar, in their Rectification, it will make them of a more grateful smell, and not lessen, but rather increase their Vertues.

Lastly, Urge not the Fire too strongly at the latter end, lest you raise some of the Fœtid Oil.

C H A P. VIII.

Of WINE.

WINE is made of the Express'd Juice of the Grape, which immediately after the Pressure, is called *Must*, and being Fermented, becomes Wine. The Fermentation causes a Separation of the gross Tartar, and the Viscous Parts of the Must, from the pure Sulphureous and Oily ones, in which is the Spirit and Essential Salt. The petrid Part of the Tartar adheres to the sides of the Vessel, and the Viscous falls to the bottom.

The sharp sprightly Wines, such as *Champagne*, *Burgundy*, *Nants*, *Bordeaux*, &c. being most Impregnated with Essential Salt, yield more Spirit than Sweet *Spanish*, and *Muscate* Wines, because they are more loaded with a Syrupical Substance.

Spirit

Spirit of Wine, or Brandy,

FILL a Copper-Still (which hath a Refegeatory) two Thirds full of French Wine; Lute on its Head, and put a Receiver to the Nose of the Worm; give it gradual Fire, till the Spirit runs in a small thred; keep it in that Degree till that which comes over being thrown into the Fire, with a Spoon, will not burn; then let all cool, and remove the Receiver, which contains the weak Spirit of Wine, or Brandy, &c.

Spirit of Wine.

PUT into a long-bodied Matras, so much of the Fore-going Vinous Spirit, as will fill one half of it; place it in a gentle Heat of Sand; and draw off one half, or till you see the small Veins Expand themselves twice the breadth that at first they appeared; then remove the Receiver, and you will have a Spirit that will burn away to a Drop or two, in a Spoonful set on Fire, by the Flame of a Paper or Candle.

This Spirit serves for making several Extracts and Tinctures.

But if you will have yet a more high and perfect Spirit of Wine, put what quantity you please of the fore-going Spirit into a Vessel, and to each Gallon four Pound of Calcin'd Tartar, or the same quantity of Pot-ashes in Powder, and very dry; shake them well, and let them stand a quarter of an Hour; Repeat the Agitation two or three times, that the Salt may Imbibe the Flegm; when 'tis well settled decant the Spirit into a long Body, in the Mouth of which hang a clean Cloth, which contains in it one Pound of Salt of Tartar, proportionably to each Gallon; Place your Matras, or Body, in a gentle Heat of Sand; and the Spirit of Wine which Distils into the Receiver will be perfect, the Salt receiving and keeping back the Flegm. This Spirit is fit for any Use in Chymistry, as a Menstruum, or for Extracting Tinctures, &c.

It is sometimes taken inwardly, to the quantity of half, or three quarters of a Spoonful, by Apoplectical Persons, and is externally us'd in Burns, also in cold Pains and Contusions, &c.

Spirit of Wine Tartaris'd.

TAKE Salt of Tartar, two or three times Coagulated and Dissolv'd, one Pound; give it a strong Fusion in a Crucible, for two Hours, Powder it in a warm Mortar, and whilst warm, put it into a Matras, to two Quarts of the former Rectify'd Spirit of Wine; shake them well together, and place them in a Sand Furnace; Lute the Junctures of the Head and Receiver; Give Fire to such a Degree, as may make the Drops succeed each other very quickly: This Spirit of Wine Volatizes, and carries over with it some part of the Salt of Tartar, which is demonstrable by the Salt sustaining the loss of at least one Ounce of its weight.

By this Operation the Spirit of Wine acquires a more agreeable Scent and Taste than before, and it is more Subtle, and given in a less Dose, and for the same Uses as the former.

Spirit of Wine Tartaris'd another way.

TAKE the Salt of Tartar left in the bottom of the Matras, in the fore-going Operation, dissolve it in Pure Rectify'd Distill'd Vinegar; Filter the Dissolution, and Coagulate the Salt, which Dissolve again in more Distill'd Vinegar, Filter and Coagulate as before. Repeat this Operation so often, that no black Fœces remains, and that the Distill'd Vinegar comes off as strong as it was put upon the Salt; then is this Salt Prepared, which some call (but not truly) by the Name of *Volatile Salt of Tar-tar.*

If you will farther exalt this Salt, take of the fore-going Salt of Tartar, four Ounces, and put to it one Pound of the Spirit of Wine, which will readily Dissolve it. Let the Dissolution stand quiet three or four Hours, and Decant it gently from the Fœces; draw off the Spirit of Wine in a gentle Heat of Sand in a Retort; dissolve the Salt again in the same Spirit of Wine, and repeat the Operation till no Fœces remains: Return the Salt again into the Spirit of Wine, in which it will totally dissolve.

This

This is the true Tartaris'd Spirit of Wine, with which I Extract the Tinctures and Anodine Sulphurs of Metals, and unite them with Vegetable Fixt, and Animal Volatile Alkalies, which is one of the chiefest Ingredients in the Composition of that Excellent *Anti-Rheumatick Tincture*, which Fifteen or Sixteen Years ago Cur'd me of a violent *Rheumatism*, that Afflicted me Three Years successively: And I was not only freed, then from those Acute Pains that attended the Distemper, but have been preserved to this Day without the least Symptome of them. Nor is its Vertues confin'd to the Cure of that Disease only, but even to the Gout, Scurvy, Dropstic, Jaundice, Cholick, Green Sickness, Stone and Gravel in Bladder or Kidnies, and in Fevers: In all these Distempers it has manifested its Vertue, and given Relief to some Hundreds within this two Years last past.

This Tartaris'd Spirit of Wine is Chartick, Diuretick, and Diaphoretick.

Its *Dose* is from fifty Drops to two Drachms, in Wine and Water, or Water alone.

The Cephalick, or Head Spirit.

TAke of the Essential Oils of Cloves, Cinnamon, and Nutmegs, of each half a Drachm ; of Marjoram, Lavender, and Rosemary, of each two Scruples ; of Oranges and Lemons, *ana* one Scruple and a half ; of Fine Benjamin in Powder, one Ounce. Mix these all together in a Cucurbit, with three Pints of Tartar'd Spirit of Wine ; place them in a Sand Furnace, Fitting and Luting too, the Head and Receiver ; kindle the Fire, which gradually increase to the Second Degree, and in that Heat continue it till three Pints is drawn off.

Then take off the Receiver, and put the Spirit into a clean Matras, to which put of *Marum Syriacum*, and Lilies of the Valley, *ana* one Ounce, of *Sal Volatile Oleosum*, two Ounces, and of Essence of Ambergreese one Dram and a half ; shake them well together, and invert a blind Head, to the Matras, and keep it in a gentle Heat of Digestion three or four Days, and then put it into a Vial, well stopt for use.

It is a most Pleasant and Excellent Cephalick, three or four Drops of it being strongly snuft up the Nostrils, and the Temples a little rubb'd with it, does immediately remove any Pain of the Head; It may also be taken from ten to thirty or fourty Drops, in a little Glass of Wine or Water, and is a most Effectual Pectoral Medicine.

This is that True *Spiritus Cephalicus* which I have made above thirty Years, and has by several Persons of late Years been Counterfeited, and call'd by the Name of *Liquid Snuff*.

Spirit

Spirit of Scurvy-Grass.

TAKE of Garden-Scurvy-Grass in Flower, or fresh and newly gathered, at any other time, twenty Pound; bruise it grossly, and put it presently into a Copper-Still, Tinn'd within; Put to it three Gallons of the Grounds of Ale, with a Pint of New Yeast; stir them well together; Lute on the Head, and kindle a little Small-Cole under it, to give just a Fermenting Warmth; let it stand twenty four Hours, and then give Fire to Distil the Spirit. That which comes first is the best, and ought to be kept by it self: The second Running will serve to put to more Gras, when you Distil it another time.

It is also made without Fermentation, with Spirit of Wine, thus. To twenty Pound of Scurvy-Grass, bruised as before, put two Gallons of Brandy, or Distillers Proof Spirit, make Fire under it, and Distil one Gallon, which will be strongly Impregnated with the Virtue of the Herb. The Second Running you may keep for the same Use as before. Some add to every ten Pound of Gras, two Pound of Horse-Radish, sliced or bruised, &c.

The

The *Purging Spirit* is made by Dissolving one Ounce of Rosin of Scammony, or Jalap, in one Pound of the Spirit.

The *Dose* of the *Plain Spirit* is from twenty to an hundred Drops; and of the *Purging Spirit*, from twenty to sixty or seventy Drops, &c.

The Queen of Hungary's Water:

TAKE of the Tops of Rosemary when full of Flowers, what quantity you please; put them in a Copper-Still, Tinn'd within; Pour upon them three times their weight of Rectify'd Spirit of Wine, with as much clean Water; Lute on the Head; fit a Receiver to the Worm, and make a little Fire of Small-Cole, but not so hot as to Elevate any Spirit; and thus let it stand twenty four Hours; then give it Fire to cause it to Distil in a small Thred; and draw off the same quantity of Spirit, and half the Water. Then let out the Fire, and take the Rosemary-tops out of the Still, and put one third part of the quantity of Flowers to those already in the Still. Re-

turn

turn all the former Distillation upon the Flowers ; Lute on the Head ; Digest as before, and draw off by gentle Fire the same quantity of Spirit of Wine, which at first you put on, which keep close stopt for Use.

Its *Operation* is Diaphoretick. It is given in Convulsions, Cramps, Palsies, Lethargies, Apoplexies, and Hysterical Maladies.

Its *Dose* is from one Drachm to two or three, in a proper Vehicle.

Observe, That after the same Method with the two fore-going Spirits, you may make the Spirits of all Herbs and Flowers, &c. adding to such Herbs as yield no Moisture, so much Water as is sufficient to keep them from burning.

Obser.

Observations.

If you have a great quantity to Recti- *Spir. Vin.*
fie, you may put several Parcels to *Rectificat.*
work in a digesting Furnace, in five or
six Vessels, and you may have of Pure
Rectified Spirit two or three Gallons in
twenty four Hours time; or it may also
be Rectify'd in a Copper-still, with its
Referigeratory.

If you let it stand thirty or fourty *Spir. Vin.*
Hours, upon the Salt of Tartar in Di- *Tartarifat.*
gestion, before you begin the Distilla-
tion, the Spirit will the better Imbibe
the more Subtle Part of the Salt.

The Distill'd Vinegar you use in this
Operation, ought to be Rectify'd so of- *Spir. Vin.*
ten, till it leaves nothing in the bottom *Tartar.*
of the Vessel, in which it is Rectify'd in,
but a little white Salt.

In this Operation exceed not the Se- *Spir. Cepb.*
cond Degree of Fire, nor draw off above
three Parts of Spirit, before you take off
the Receiver, which you may do while
the Fire is still under it. Then put the
Receiver on again, and without supply-
ing the Fire any more; let what will come
off, till all is cold, which will be about a
Pint more, and is a pretty Water to wash
your Fingers and Mouth after Meals.

CHAP.

C H A P. IX.

Of V I N E G A R.

WINE becomes Eager by a Second Fermentation, caus'd by the loss of some of its most Subtle Sulphureous Spirits, by which Debilitation the Acid Salts predominate, and fix the rest of the Spirits remaining in the Wine.

Distillation of Vinegar.

PUT of good Wine Vinegar into a large Retort, or Body fitted with a Head, what quantity you please, so that one third part remain empty; Place it in a Sand Furnace, and with a Fire of the first Degree, draw off a fifth part, which keep by it self, for it will serve for some Uses: then increase the Fire to the Second Degree, and so continue till all is Distilled, except a small quantity left in the bottom of the Vessel, of the Consistence of Honey. When all is cold, take off the Receiver, and if you would Rectifie it, put it in a clean Vessel; set

it in the same Degree of Fire, to separate more Flegm, and in every thing proceed as before, till you come almost to a dry bottom, which however must not be urged too far, for fear it should give an Empyreum to that which is already Distill'd.

Its chief Use is for the Dissolutions and Precipitations of several Bodies.

Spirit of Vinegar.

PUT Distill'd Vinegar upon Filings of *Venus*, or to that Scoria of *Venus* which the Brasiers call *Spittle-dust*, and make it into a Paste; let it stand some time without Heat, to penetrate the *Venus*; Evaporate over a very gentle Fire, till you begin to smell the Fumes of the Vinegar; then take it presently away, and Imbibe it again; let it stand again to Imbibe, without Heat, and then Evaporate as formerly; do this so often till you perceive an eager Scent at the beginning of the Evaporation, which signifies the *Venus* is Satiated with the Distill'd Vinegar: Put this Satiated Calx into a Retort; place it in a Sand Furnace; Fit to it a Receiver, and Lute well the Joint with a wet Bladder; give

Q.

it

it the first Degree of Fire for two Hours, then increase it to the Second two or three Hours more, and so to the Third three Hours longer; at last give it the Fourth Degree for two Hours more; then let all cool, and in the Receiver you will have a Concentrated Vinegar, which is call'd *Spirit of Vinegar*. You may still separate the more Flegmatick Part by Rectification. It has all the Properties of Distill'd Vinegar, but will perform any Operation with more force and in much less quantity.

Observe, That the same *Venus* will serve several times for the Concentration of more Distill'd Vinegar.

CHAP. X. *Of TARTAR.*

IT is the Essential Salt of Wine, which after Fermentation separates and adheres to the sides of such Casks as contain the Wine. It is Red and White; the White contains less Earth than the Red; and is therefore preferable to the Red; the best white Tartar is that of Rhenish-Wine, which comes from *Germany*: The *Lees* of Wine also contain much Tartar, which being dried and Calcin'd, are call'd *Cineres Clavellati*, or Gravell'd Ashes, out of which a Salt of Tartar may be Extracted.

Crystals, or Cream of Tartar.

Take of Crude Tartar what quantity you please, boil it in Water, till the parts which are capable of Dissolution be entirely dissolved; run the Liquor, whilst it is hot, through a Flannel Bag into an Earthen Pan, and Evaporate till a Pellicle appears: Then set it in a cold place, and suffer it to stand quiet

two or three Days: Afterwards Decant the Liquor, and you will find Crystals adhere to the sides of the Pan, scrape them off, and Evaporate the rest of the Liquor, as before; and set it again to shoot into Crystals; Repeat the Evaporation till all the Crystals are shot.

Its *Operation* is Cathartick and Diuretic.

Its *Dose* is from half a Drachm to three Drachms.

The Fix'd Salt of Tartar.

Take what quantity of Crude Tartar you please, Calcine it in a Pot (or Glass) House; or you may put three or four Pound of it in strong brown Paper, which tye up with Thred, and wet it with Water; then put it upon some kindled Charcole, and bury it with more Coles; there let it continue till all that is Combustible be consum'd, and you will find the Calcin'd Tartar in an entire Lump. Dissolve it in warm Water, then Filter and Evaporate to drynes, in a clean Iron, or Earthen Pan, and that which remains is the Fix'd Salt of Tartar, which may farther be Purify'd by Dissolution, Filtra-

Filtration, and Evaporation, till in the Dissolution it leaves no Fæces at all.

It is a good Aperitive Salt, and us'd to draw forth Tinctures from Vegetables, and is given in all Obstructions.

Its *Dose* is from fifteen Grains to one Drachm.

Some think it of the same Use with every fixt Vegetable Salt.

Let this Salt be laid in a Cellar, or other cool moist place, and it will attract the Air so as to Liquifie it, which after Filtration we call Oil of Tartar, *per deliquium*.

It is endued with all the Vertues of the Salt, and is sometimes dropt in Lily, Bean-Cod, or Orange-flower-water, to clear the Complexion.

Soluble Tartar.

MIX four Ounces of Salt of Tar-tar, with eight Ounces of Cream of Tartar, and pulverize them together; put them into an Earthen Pan, whereinto you have pour'd three Pound of Spring-water; boil them till they are dissolved, and remember to stir them

Q 3 now

now and then. Filter the Dissolution whilst it is warm; Evaporate to Dryness, and keep it in a Glafs well stopt.

Its *Operation* is Cathartick and Diuretic.

It is given in Obstructions, Cachexies, and Dropsies.

Its *Dose* is from one Scruple to a Dra. or a Drachm and an half, in Broth or any other proper Vehicle.

Chalybiated Soluble Tartar.

Take half a Pound of the Tincture of Tartar made with Steel, and put it into a Glafs Body; pour upon it two Ounces of the aforesaid soluble Tartar; set the Glass in a gentle Heat of Sand to Evaporate; stir it about sometimes with a clean wooden Spatula; and when 'tis dry, you will have a black Powder, which keep in a Vial well stopt.

It is a good Aperitive, and is Endow'd with all the Vertues of the Tincture of Tartar, with *Mars*, according to the description in the Chapter of *Mars*.

Its *Dose* from one Scruple to one Dra. or one Drachm and half.

Chaly-

Chalybeated Tartar.

Pour three Pints of Spring-water into an Earthen-Pan, and set it over the Fire to boil; as soon as it boils, put in half a Pound of Crystals of Tartar, and half an Ounce of *Vitriolum Martis*, finely powdered apart, and ground together. Let them boil a quarter of an Hour, stirring them with a wooden Spatula, till they are dissolved: Then strain the Mixture, boiling hot, through a Cotton Bag, into a clean Pan, and set it in a cold place to Shoot into little Greenish Crystals.

It is endued with the Qualities of the fore-going Preparations; and its Dose from one Scruple to one Drachm.

Emetick Tartar.

Take Cream of Tartar half a Pound, *Crocus Metallorum*, two Ounces, let them be very finely powdered, and after they are well mixt, put them into a Glas'd Pot; and add two Pound of Spring-water; let them boil seven or eight Hours, stir them often, and as the

Q 4 Water

Water wastes, supply it ; Take off the Mixture from the Fire boiling, and run it presently through a Flannel Bag ; then Evaporate two Thirds in a Glass Body in Sand, and set it in a cold place to Shoot ; separate the Superfluous Water, and Evaporate as before ; gather the Crystals, dry them gently, and keep them in a Vial for Use.

It is a gentle Emetick.

Its *Dose* from three, to ten or twelve Grains.

The Soluble Emetick Tartar.

Pulverize four Ounces of Crystals of Tartar, with one Ounce of *Crocus Metallorum*, grind them well together, and put them into a Glass Body. Pour upon them half a Pound of Spirit of Urine ; and when the Ebullition is well over, add twelve Ounces of Spring-water. Boil them in a Sand Heat seven or eight Hours, supplying the Liquor as it consumes : Take it from the Fire as hot as you can, and run it through a fine Flannel Bag ; then Evaporate it gently, till it is dry, and keep it in a Vial for Use.

It

It is a very gentle Emetick.
Its Dose from four to fifteen Grains,
In Broth, or thin Water-gruel.

*The Emetick and Cathartick Salt
of Tartar.*

Take of Salt of Tartar half a Pound, *Crocus Metallorum* two Ounces; make them both into fine Powder, and mix them well; Put them into a Crucible, and let them melt together half an Hour; then take it from the Fire, and dissolve it in clean Water; Filter the Dissolution, and Evaporate till a Skin appears: Then drop gradually into it Oil of Vitriol, till the Ebullition ceases, and over a gentle Heat of Sand Evaporate to dryness; stir it in the Evaporation with a Glass Spatula, or clean Tobacco-Pipe; and when it is cold, put it up in a wide-mouth'd Vial, well stopp'd, for Use.

Its Operation is Emetick and Cathartick.
It is a *Febrifuge*, given with good success in Tertian and Quartan Agues, also in Dropsies, Scurvy, Jaundice, and Hypochondriack Melancholy.

Its Dose is from three, to fifteen Grains.

Vitrio-

Vitriolated Tartar.

PUT what quantity of Oil of Tar, you please into a Glas Cucubit, drop gradually upon it Rectify'd Oil of Vitriol, till the Ebullition ceases: Then Evaporate the Humidity in a gentle Heat of Sand, and there will reside a very white Vitriolated Tartar, which keep in a wide-mouth'd Glas, well stopt.

It is a little Cathartick and Diuretick, and a good Aperitive, given in Quartans, in Scrophulous and Hypochondriacal Cases.

The Soap of Tartar.

TAKE Rhenish-wine Tartar, or Cream of Tartar, and Salt Peter, of each one Pound, in Powder; mix them well together, and put them into a red hot Crucible, by a Spoonful at a time; when 'tis melted take out the Mixture, with a little Iron Ladle, and put it into a warm Earthen Pan, adding to it so much warm Water as is necessary to Dissolve it; Filter and dry it into a Salt, and grind it to Impalpable Powder, or as fine as possibly

sibly you can; then put it into a wide mouth'd Glas, and Expose it to the Air, till it is a little moistened, which it will sufficiently be in sixteen, eighteen, or twenty four Hours, according to the moistnes or drynes of the Weather. Then put to each Pound of the Salt, four Ounces of Rectify'd Oil of Turpentine; stir them well together with a wooden Spatula, till they seem to be Incorporated: Then set the Mixture aside, and cover it, to keep out the Dust; stir well two or three times a day, till you perceive the Oil and Salt Incorporated, and of the Consistence of a Syrup: If it wants Oil to make it of that Consistence, add more.

This Soap is an excellent Diuretick, and something Cathartick; and is given in the Stone and Gravel in the Bladder or Kidnies.

Its *Dose* from one Scruple to a Dram, in a little fine Sugar.

It is call'd the Correcter of Vegetables; and the chief Ingredient which Corrects the Opium in *Starky's*, or *Matthews's* Pill.

The

The Distill'd Oil and Spirit of Tartar.

FILL an Earthen, or Coated Glas Retort, half full with Cream of Tartar; place it in a Reverberatory Furnace; and Lute to it its Receiver; Let the Fire of the first Degree be for three Hours, then increase it to the Second three Hours longer, and on to the third three or four Hours more; at last to the fourth Degree, where keep it till no Fumes ascend any more into the Receiver, in which you will find a Fœtid Oil and Spirit; you may separate the Oil by Filtering it through a Coffin of Paper; then put the Spirit in a long-boll'd Retort, and in a gentle Heat of Sand Rectifie it, and separate the Flegm which comes over after the Subtle Spirit.

To make this Spirit more Aperitive and Excellent, to three parts of the Oil and Spirit which your Distillation produced, put one part of *Spiritus Nitri Dulcis*; shake them well in the Receiver, and put them carefully into a clean Glas Retort, which set in a Sand Furnace; Fit and Lute on a Receiver, and give it a Fire of the First Degree, till the Lute be dry; then advance to the Second, in which you will have a most Penetrating and

and Grateful Spirit, which is one of the most powerful Diaphoreticks that I know. It is also Diuretick and Anodine.

It is given in the Palsie, Epilepsie, Asthma, Histerical Maladies, Scurvy, and in Fevers, with good success.

Its *Dose* is from two Scruples to two Drachms, in any proper Vehicle.

A Volatile Salt of Tartar.

TAKE the Lees of Wine, and dry them gently, when dry, beat them into gross Powder; fill a Glass coated, or Earthen Retort, half full with them; Place it in a Reverberating Furnace; give it gentle Fire to drive off the Flegm which first comes over; and when you perceive Fumes to rise, fit and lute on the Receiver, augmenting the Fire gradually, till at last, with the most extream degree, no more Fumes will arise. Then let all cool, and take off the Receiver, in which you will find a whitish Liquor, which contains the Volatile Salt, and upon it will swim a little Foetid Oil; put it into a Vial, and with a little clean Water rinse out the Salt which adheres to the sides

sides of the Recipient, and put it to the rest. Then put them into a Coffin of brown Paper, and the Spirit with the Salt will pass through, and leave the Oil in the Coffin.

Put the Spirit into a long Matras, fit to it a Head and Receiver; lute the Joints well, and with a gentle heat of Sand sublime the Salt into the Head; when it is pretty well charged, take off that Head, and presently fit on another, and continue the same degree of Fire, till the Salt begins to melt, then change the Head, and augment the heat a little to distil the volatile Spirit of Tartar; when the Drops are insipid, take off the Receiver, and keep the Spirit from the Air in a Vial well stopt, because of its volatility, as also the Salt; for if the least Air be admitted, it will relent.

Its *Operation* is Diaphoretick and Diuretick.

Its *Dose* from ten Grains to half an Ounce; it is a Medicine much esteemed by many Physicians; and is given in the Palsie, Apoplexy, Epilepsie, Tertian and Quartane Agues; it opens all obstructions, and provokes the Terms; The volatile Spirit is some of the Flegm impregnated with the Salt, and endued with the same Vertues, and given from ten drops to two scruples.

Another

Another Volatile Salt of Tartar.

TAKE the satiated Salt of Tartar described to make the true Tartariz'd Spirit of Wine; fill a coated Retort half full with it; place it in an open Furnace, lute on a Receiver, and give it gradual Fire, observing the same Method as in the former Operation, both in the distilling and rectification.

Tincture of Tartar.

PUT a pound of pure Salt of Tartar into a Crucible; Place it in a Melting Furnace, and let it heat gradually, till it is of a white melting heat; cover it well with Coles, and keep it in the most extream degree of Fire, five or six hours; then pour it into a warm Mortar, and whilst warm, powder it, and put it into a Matras, heated upon warm Sand to preserve it from breaking with the hot Salt. Then pour upon it twenty ounces of Tartariz'd Spirit of Wine, invert and lute well to it another Matras to make it a double Vessel; make a gentle Fire, and let it simper six or seven

seven hours, and in that time it will acquire a good Tincture, which when cold, put it into a Vial, and keep it well stoppt.

Its *Operation* is Diaphoretick and Diuretick; it is an excellent aperitive, and a good anti-scorbutick.

Its *Dose* from ten to fifty or sixty Drops, in any convenient Vehicle.

Observations.

*Cream of
Tartar.*

IF you dry the crude Tartar in an Oven, till it is a little scorcht (not calcin'd) to evaporate some of its acid Particles, it will dissolve more easily, and the Cristals will be larger and whiter than otherwise they would be.

*Salt of
Tartar.*

The first Evaporation may be made in a clean Iron Pan, which ought to be kept stirring when it begins to coagulate, till it is quite dry; and if you design a farther purification, and that it is not so white as you expect it; put it into a Crucible, and set it in a little Charcole Fire (so that it do not melt) and in a quarter of an hours time it will be very white.

If you desire it to crystallize, evapo- *soluble* rate only till a skum appears; then in a *Tartar*: clean Earthen Pan, or wide-mouth'd Glass, set it in a cold place to shoot into Crystals, which must be carefully dry'd, and kept close stopt, because they are apt to dissolve.

Be careful in the drying of it, that it *Chalybeat*. be not burnt, because Burning deprives it *Sol. Tartar.* of its Cathartick Quality. .

It may be made with the Vitriol, or *Chalybiat*. Filings of *Mars*; if you put one Ounce *Tartar.* and a half of Filings in the place of half an Ounce of Vitriol; and bake the com- mon Crystals of Tartar to a brownenes, it will dissolve with more ease, and the Crystals will be fairer.

It may be made with *Crocus Metallo-* *Emet. Tart.* *rum*, *Vitrum Antimonii*, Flower of Anti- mony, or *Mercurius Vitæ*. The Cream of Tartar as before, being baked, will render the Emetick Crystals more large and fair.

The Spirit of Urine partly satiates *Soluble* the Acidity of the Tartar, by which it *Emet. Tart.* more readily dissolves. Take care to dry it without burning.

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This

*Emet. Ca-
ibari. Salt of Tartar.* This Evaporation will be best performed in a Glass Cucurbit, because the Inspissation of the Oil of Vitriol would prey upon the Glasing of an Earthen Vessel, to the Prejudice of the Medicine.

Vitriolated Tartar. It may be made of pure Salt of Tar-
tar, instead of the Oil, Inspissating the Oil of Vitriol upon the Salt, and stirring it with a Glass Spatula, or clean Tobacco-Pipe, till the Fermentation is over. But take care you do not Evaporate too much, least you deprive it of the Acidity it ought to retain.

Soap of Tartar.

The Salt may be Evaporated in a clean Iron Pan; and if it be a little moistened by the Air, before the Oil is put to it, their Union will be facilitated thereby. You may also Distil the Oil of Turpen-
tine from Aromatick Herbs and Spices, to give it an agreeable Scent. The older this *Sapo* is the better 'tis: I have several Ounces of it by me now, which I made in the Year 1665. which I value as much as its weight in Gold.

*Distillat.
of Tartar.*

The Flegm may be separated either at the first Distillation, or in its Rectifica-
tion: If at the first Distillation, put on the Receiver, without Luting it, and when

when the white Fumes appear, change, and Lute on the Receiver.

If you can have such Lees as the Juice *Vol. Salt* is press'd out of by those who make *Vi. of Tartar*; negar, it will save you the labour of drying them, and will be altogether as good for this Operation. And if in the Rectification you desire to preserve the Salt in a dry Form, you must be watchful; and when you see the Salt have the least Inclination to Dissolution, you must change the Head; presently take out the Salt, and put it in a dry Vial, well stopping it, to preserve it from the Air, which would presently dissolve it. But if so much Water come over with it, as to render it in a Liquid Form, it then has the same effect with the Salt, being given in a greater Dose.

If after the Rectification you separate the Flegm from the Oil, and return the Volatile Spirit upon it, and put to them a third their weight of sweet Spirit of Nitre, digest them in a double Vessel two or three Days, in a gentle Heat, then Un-lute the Vessel, and Fit and Lute on a Head, with its Receiver, and you will obtain, with a gentle Heat, a most Excellent and Penetrating Salt and Spirit.

Tincture of **Tartar.** Melt not less than one Pound of the Salt, because it wastes considerably, by long Fusion, and be sure that your Spirit of Wine be totally Deflegamted, otherwise your Tincture will not be full.

CHAP. XI.

Of A L O E S.

IT is the Juice of a Plant called *Semper Vive*, which grows in *Egypt*, the Island of *Soccotra* in the *Persian-Gulph*, in the Island of *Berbadoes* in the *West-India's*, and other places.

That of *Soccotra* is counted the best, because they Transplant and Cultivate it, but in other places they use the Plant wild, as they find it: Every Country produces two sorts of it, *viz.* that made of the Juice which drops from the Plant by Incision, and that made of the Expressed Juice. *Hepatick Aloes* is that sort made by Incision in all Countries, and takes its Name from its similitude to the Liver.

Extract of Aloes.

Dissolve what quantity of Aloes Succotrine, or Hepatick, you please, in the Distilled Water of Roses, Sucory, Borage, or any other, Filter the Dissolution through a Flannel Bag, and Evaporate

R 3 evaporate

porate to the Consistence of an Extract: A better Extract is made with Spirit of Wine; but the best is made with Tincture of Tartar, which does not only Correct the Crudity of the Aloes, but that pure Salt of Tartar the Spirit of Wine is thereby Impregnated with, will preserve it in its full Vertue, and due Consistence very many Years.

Observe, That if the Aloes be very good, it will almost all Dissolve, leaving nothing behind it but some dirt, which accidentally, in its drying, falls into the Juice.

CHAP. XII.

Of M Y R R H E.

IT is a Resinous Gummy Juice which drops from a little Thorny Tree by Incision. The best is in Transparent smooth Drops, and when new, of a whitish Colour, but in time becomes yellow, but continues Transparent, and breaks with little white specks in it; such as this is not often met with: but of such as is commonly vendible, choose that which is Yellow, or Red, Bitter, Transparent, and of a grateful smell.

It grows in *Abyssine* in *Africa*, and *Moco* in *Asia*: That of *Abyssine* comes through *Egypt* into *Europe*; and that from *Moco* by the Caravans to *Aleppo*, &c.

Tincture of Myrrhe.

PUT into a Matras of Fine Myrrhe in Powder, one Pound, of Spirit of Wine four Pound; invert another Glass into the Mouth of the Matras, to make a double Vessel; Lute the Juncture, and R + set

set it in a gentle Heat of Sand, to Extract its Tincture.

It is Sudorifick and Aperitive. It is given in the Apoplexy, Lethargy, and Palsie, is good to Expedite Womens Labour, and is often apply'd outwardly.

Its *Dose* is from eight to twenty four Drops in a proper Vehicle.

Oyl of Myrrhe by Distillation.

FILL a Retort half full with coarse Myrrhe ; place it in a Sand Furnace, and Lute to it a Receiver ; give it Fire by Degrees, to the greatest height ; when the Fumes cease, let out the Fire, and in the Receiver you will have a Fœtid Oil, and an Acid Spirit.

The Oil is Externally apply'd, to bring stubborn Ulcers to Suppuration. The Spirit is Diaphoretick and Diuretick.

Its *Dose* is from eight to twenty four Drops, in a proper Vehicle.

Oil of Myrrhe, per deliquium.

BOil Eggs till they are hard, split them in the middle, and take out the Yelks; fill the Cavity with fine Myrrhe, in Powder; place them upon little Sticks of about an Inch and a quarter long, three or four of them being prickt into the Egg, set them in a clean Earthen Pan, which place in a Cellar, or some such moist place, and there will drop from them into the Pan, a Liquor, which is call'd *Oil of Myrrhe*.

Its Use is to take away Spots and Blemishes on the Skin, outwardly apply'd.

Observations.

SHake the Myrrhe and Spirit of Wine Tincture of Myrrhe. well, two or three times every Day, and let it be charged with a full Red before you pour it off from the Myrrhe, which will require two or three Days time.

You

Oil & Spir. You may Rectifie the Oil and Spirit together, and then separate them; then put to the Spirit a fourth part of its weight of *Spiritus Nitri Dulcis*, and Rectifie them; by which the Spirit will be rendered more agreeable both to Smell and Taste, and made more Aperitive.

The Oil per deliquum. It is improperly call'd Oil, being only some of the most subtle Parts of the Myrrhe Liquify'd by the Moisture of the Air. If any Dirt has accidentally fallen into the Deliquiated Oil, you may Filter it through Paper.

CHAP. XIII.

Of S A F F R O N.

IT is a Flower which comes to its Perfection in the latter end of September, and in October. That of *England* is accounted the best, both for the largeness of the Leaf, its Fragrancy and Colour. The *English* have also a way to Preserve it, exceeding that of any other Country.

Tincture and Extract of Saffron.

PUT four Ounces of good *English* Saffron into a Matras, with twenty four Ounces of Spirit of Wine; let them stand in a gentle Heat of Sand fourty eight Hours, sometimes shaking them, and you will find the Spirit well charged with the Tincture of the Saffron; Pour off the Tinged Spirit, and put on one Pound more, proceeding as you did before, and you will have a Second Tincture, but not altogether so deep as the First; put both the Tinctures into a Curbit;

curbit; place it in Sand; Lute on its Head and Receiver, and in a gentle heat draw one half of the Spirit of Wine off, and that which remains behind will be a strong Tincture.

This Tincture is made into an Extract by Evaporating it into a due Consistence.

Observations.

Tincture of Saffron.

After Decantation of the Tinged Spirit, you may add new Spirit of Wine, as long as it yields any Tincture, and then put all the Tinged Spirits into a Cucurbit, and draw off, till you leave not above twenty Ounces of Tincture in the Cucurbit.

Extract.

In a very gentle Heat of Ashes Distil off as much Spirit of Wine as you can, without burning the Extract; then pour it into the bottom of a Glass cut shallow, or a clean smooth Earthen Vessel; set it upon so much Hay or Straw as to stand firm in a *Balneum*; and in that Heat keep it continually stirring, 'till it is Evaporated into an Extract.

CHAP. XIV.
Of ELIXIRS.

Elixir is the Name of a Medicine intended to Heal all Humane Diseases, and remove the Impurities of imperfect Metals. But my design is only to handle those Vegetables whose Essential Parts being separated from the grosser and more Feculent, by proper Menstruums, and the Industry of the Artist, will yield greater Medicines by the Union and Conjunction of their Vertues, and so may not improperly, though subordinately, be called by the Name of *Elixirs*. And first of *Elixir Proprietatis*.

Elixir Proprietatis, with Oil of Sulphur.

TAke of the best Aloes, fine Myrrhe, and *English* Saffron, of each one Ounce; let the Myrrhe and Aloes be beaten into fine Powder, and the Saffron cut into small pieces; put them into a long Body, or Bolt-head, and put to them

them six Ounces of Tartaris'd Spirit of Wine; make the Vessel double, fit for Circulation, and set it in a gentle Heat for seven Days, shaking it once or twice a Day; then un-lute the Vessel, and put to the Tincture nine Ounces of *Ol. Sulph. per C.* by an Ounce at a time; and when all is in, shake them well; Lute on the other part of the Circulatory, and let them stand in Warmth fourteen Days, agitating them as before, once or twice a Day; then let them cool, and press out all the Moisture through a strong Cloth; let it stand till settlèd, and by Decantation separate the Elixir from the Fæces; put it in a Vial, and keep it close stopt for Use.

Its *Operation* is Diaphoretick and Aperitive: It Fortifies the Heart, and Purifies the Blood, Creates an Appetite, and helps Digestion; and some count it a great Preservative against Pestilentious Air; with many other Vertues.

Its *Dose* is from ten to fifty, or sixty Drops, in Wine and Water, Beer or Ale, Broth or Spring-water, or any other Vehicle appropriated to the Disease you would remove by it.

Elixir

*Elixir Proprietatis, with Tincture
of Tartar.*

TAKE of Select Myrrhe, Aloes and Saffron, *ana* one Ounce; beat and cut as before; put them in a Vessel of Circulation, and pour upon them twelve Ounces of Tincture of Tartar; place them in a gentle Heat, to stand twenty one Days, shaking the Mixture every Day; then let it cool, and press it out as you did the former; let it settle; Decant the Elixir from the Fœces, which put in a Vial, and stop it for Use.

Its *Operation* is Diaphoretick and Diuretick; and is said to have all the good Qualities of the former, and to be more Aperitive, and a greater Sweetener of the Blood.

Its *Dose* is from one Scruple, to one Drachm and half.

Elixir

*Elixir Proprietatis, with Spirit of.
Harts-Horn.*

Take of the best Myrrhe, Aloes and Saffron, *ana* one Ounce, Tartaris'd Spirit of Wine eight Ounces, Spirit of Harts-Horn four Ounces, and proceed in every thing as in the preceding Process.

This is also Diaphoretick and Diuretick, and endued with the Vertues of the former, but more Effectual in Hysterick Vapours.

*Elixir Proprietatis, with Sal. Volat.
Oleofum.*

Take of choice Myrrhe, Aloes, and Saffron, *ana* one Ounce; place them in a Circulatory Vessel, and put to them of Tartaris'd Spirit of Wine four Ounces, and of *Sal. Vol. Oleofum* nine Ounces, and proceed in every thing as before.

It is Diaphoret. and Diuret. is proper in all Cases where the former is useful, and more agreeable both to Scent and Taste.

Its *Dose* the same with the other.

The Anti-Pestilential Elixir Pro-
prietatis.

TAKE of Myrrhe, Aloes, Saffron,
and Camphire, *ana* one Ounce,
Virginia-Snake-Root four Drachms, and
Cocheneal half an Ounce; Powder what
is to be powdered, mix the Ingredients,
and put them into a Matras; pour upon
them *Spiritus Nitri* dulcify'd twelve Ounc-
es, and let them stand in Digestion
twenty one Days, observing every thing
as in the fore-going Proces.

This is said to be the most powerful
Medicine against the Plague, and all
Contagious Diseases, that is yet known:
It expels Wind, and is an excellent Re-
medy against the Cholick, and all Gri-
ppings of the Stomach and Bowels; a great
Aperitive, and gives Ease in the Stone,
both in the Reins and Bladder; also in
the Measles and Small-Pox, a better Me-
dicine is not known.

Its *Operation* is Diaphoretick and Diu-
retick.

Its *Dose* is from half a Scruple to one
Drachm, or one Drachm and a half, in
any proper Vehicle.

The Volatile Elixir Proprietatis.

IT is the fore-going Elixir with Spirit of Wine six Ounces, and Oil of Sulphur nine Ounces, with the same Proportions of Myrrhe, Aloes and Saffron, which after Digestion must be Distill'd in a gentle Heat, with two Cohobations of the same Spirit, and must be drawn off with three Days Digestion between each Cohobation.

It has the same Vertues of most of the Preceding Elixirs, and is more agreeable to the Palates of many People.

Its *Operation* is Diaphoretick and Diuretick.

Its *Dose* from ten Drops to a hundred, in any proper Vehicle.

Elixir Vitrioli.

TAKE Galangal one Ounce and a half, Calamus Aromaticus, Mint, and Sage dried, *ana* half an Ounce, Cinnamon, Cloves and Ginger, *ana* three Drachms Nutmegs and Cubebs, *ana* two Drams, Lignum Aloes, and Lemon-peel, *ana* one Drachm,

Drachm, white Sugar-Candy, three Ounces, all Pulveris'd; put them into a Matras, and pour upon them Oil of Vitriol, one Pound, Spirit of Wine one Pound and an half; Invert another to make it a double Vessel; Lute the Joint, and set it in a gentle Heat to Digest, fifteen or twenty one Days. It is counted a good Stomachick.

Its Dose is from ten, to sixty or seventy Drops.

Elixir Paeoniae.

Take of the English Roots of *Palma Christi*, *Pyretbri*, and one Ounce, Mistletoe of the Oak, Fennel-Seeds, *Anacardi*, and six Drachms, Rosemary-Flowers, *Stæchad. Arab.* Lavender, and three Ounces, Shavings of Harts-Horn, Elks-Hoof, Man's Skull, and one Drachm and a half, Marjoram one handful, Rectify'd Spirit of Wine two Pound; Digest these fourteen Days, and then Distil in *Balneo Mariae*; to which add the Roots, Flowers, and Seeds of *Paeony*, and one Ounce, Spec. *Diamosci Dulcis*, *Diaxylo-Aloes*, of each half an Ounce; Digest them a Month, and Filter.

To twelve Ounces of this Tincture add one Drachm and a half of Salt of *Paeony*, and four Ounces of Spirit of *Vitriol* Rectify'd and Impregnated with Native *Cinaber*. Then Circulate them into an *Elixir*.

Otherways 'tis made as followeth.

Take the Root of *English Pal. Christi*, *Pyrethri*, Milletoe of the Oak, Fennel-Seeds, *Anacard*. Rosemary-Flowers, *Marjorum*, *Stachad*. *Arab*. *Castor*. and Lavender, in the fore-going quantities: And instead of the Shaving of Harts-Horn, Elks-Hoof, and Man's Skull, take of the Aromatick Spirit of Harts-Horn, hereafter-mentioned, half an Ounce: Digest them all in two Pound of Rectify'd Spirit of Wine fourteen Days; at the end of which Distil them in *Balneo Maris*, or a gentle Heat of Sand or Ashes, and to every Pound of this Distill'd Spirit, add four Ounces of Rectify'd Spirit of *Vitriol*, the Roots, Flowers, and Seeds of *Paeony*, ana one Ounce; *Spec. Diamosc. Dulcis*, *Diaxylo-Aloes*, of each half an Ounce, and with one Dram of Salt of *Paeony*, Circulate into an *Elixir*.

Elixir

Elixir Salutis.

Take Leaves of Sena half a Pound, Jalap in Powder four Ounces, *Enula Camp.* also in Powder, and Liquorish, *ana* two Ounces, Juniper-Berries, Anniseeds, and Coriander-Seeds, *ana* one Ounce, Cream of Tartar, one Ounce and a half, Honey and Marina, of each two Ounces; slice the Liquorish; put them all into a Glass Body, and put to them *French Brandy*, or clean *English Proof Spirit*, four Quarts; Lute on a Glass, to make a Circulatory, and let them stand in a gentle Heat of Sand two or three Days; then pour off the Liquor, and press it out from the Ingredients, and let it stand in a Vessel close stopt twenty four Hours to settle; then by gentle Inclination, pour it from the Fæces, and keep it well stopt for Use.

Its *Operation* is Cathartick and Diuretick.

Its *Dose* is from half a Spoonful, to three or four Spoonfuls, either by it self, or in any convenient Vehicle.

Elixir, or Balsamum Polychrestum.

Take Salsaparilla four Ounces, China-Root, and Guiacum rasped, *ana* two Ounces and a half; let the Salsapar. and China be grossly powdered, put them into a Matras, with three Pound of Tar-taris'd Spirit of Wine; stop the Mouth of the Matras with a little Egg, or Bolt-Head; Lute it well, and set it on warm Sand, to digest three Days, shaking it now and then. Then let it cool, pour out the tinged Spirit, and press what you can from the Ingredients; put the Tinged Spirit into the Matras again, and add to it of Gum Guiaci in Powder, nine Ounces; Lute up the Glafs, and let it stand in Digestion three or four Days, and shake it often every Day. Then let it cool and settle, and pour off the Tincture from the Sediment; put the Tincture into a clean Matras, and put to it one Ounce of Balsam of *Peru*, and half an Ounce of Balm of *Gilead*; mix them with the Tincture by much Agitation; let them stand in Digestion, as before, three or four Days longer, and shake them often; when the Balsam is well Incorporated with the Tincture, pour it off clear into a Vial, which stop and keep for use.

It

It is Cathartick, and sometimes Dia-phoretick.

Its *Dose* is from ten, to seventy, eighty, or a hundred Drops, in any proper Vehicle.

To these Elixirs there needs no other Observation than to make good choice of the Ingredients, to Lute the Joints of the Circulating Vessels well, and to moderate the Heat so, as not to endanger the breaking of them.

C H A P.

C H A P. XV.

Of O P I V M.

IT is a Juice which Distils from the Heads of Poppies by Incision, found in the Kingdom of *Cambaia*, about *Grand Cairo* in *Egypt*, and *Thebes* in *Greece*. Some tell us of three sorts, *viz.* Black, Yellow, and White; but none of these come frequently amongst us, the Inhabitants of those Countries keeping them for their own use, and sending us the exprest Juice of Poppy-heads, thickened and wrapt up in Leaves, for the Convenience of Transportation: It is properly call'd *Mecoacan*; such may be also Exprest from Poppy-Heads, which grow in *Italy*, and the Southern Parts of *France*, but not so strong as the former.

That which comes from *Thebes* is accounted the best. Choose that which is Black, breaking with a little cast of Yellow, free from little Stubs or Leaves, a little Acrimonious, of a very bitter Taste, and a disagreeable Stupefactive Scent.

Extract

Extract of Opium.

PUT four Ounces of good Opium in thin Slices, into a glass Body, wherein there is two Pound of Spring-Water; set it in Sand, and stop the Mouth of the Body with another Glass, make Fire under it, till by gradual Heat it is made to Boil, in which state keep it two or three Hours, then let out the Fire, and whilst the Dissolution is hot, run it through a Flannel Bag, and press it strongly with your Hand, into an Earthen Vessel; put that which remains in the Bag into a Matras, in which there is a quart of Rectify'd Spirit of Wine; make a double Vessel of the Matras, and let it stand in Digestion twenty four Hours, now and then shaking it. Then take it out, and when 'tis cool, run it also through a Flannel, as before; put the Spirit of Wine which is charged with the Gummous Part of the Opium, that the Water was not capable of dissolving, into a Cucurbit, and in a gentle Heat draw off two Thirds of the Spirit of Wine, which will serve again for the same Use. Then put both the Extractions together, and in a clean Earthen-Pan, with a moderate Fire Evaporate, till it is of a Consistence fit to form into

to Pills, which put up in a Gally-pot for Use.

It is the most certain Anodine yet known to Physicians, and is fit for any Compound Laudanum.

Its *Dose* from half a Grain to two or three Grains.

Dr. Goddard's Compound Extract of Opium.

TAKE of Saffron and Nutmegs, *ana* one Ounce, of Castor. half an Ounce: slice the Nutmegs and Castor. thin, and put them into a Matras, with the Saffron; put to them twelve Ounces of Tincture of Tartar; set them in a gentle Heat of Sand (with the Mouth of the Matras well stopt) in Digestion twenty four Hours, shaking it now and then; then let it cool, and press it through a Cloth into a clean Earthen Pan; what stays in the Bag put into the Matras again, and put to it half a Pound of Rectify'd Spirit of Wine; let it stand warm twelve Hours, and strain it off to the other; into these Tinctures put five Ounces of the Extract of Opium, set them over a gentle Fire to Evaporate into an Extract.

It

It is a good Soporifick, causing rest, and alleviates all Pains, in what part of the Body soever.

Its Dose from half a Grain to three or four Grains.

Liquid Laudanum, with Juice of Quinces.

TAke two Ounces of good Opium, one Ounce of *English Saffron*, and one Pound and an half of the Juice of Quinces. Let the Opium be thin slic'd, and with the Saffron be put to the Juice of Quinces, in a Glas Body; some adding Yeast of Ale to Ferment it. Set them in a gentle Heat of Sand, to digest till the Fermentation is over, and the Saffron subsides. Then express the Juice, and let it stand to settle: when 'tis settled, pour it off by gentle Inclination; put the Liquor into a Matras, and put to it two Ounces of Cinnamon, one Ounce and an half of Cloves, and one Ounce of *Jamaica-Pepper*; let them be bruised, and put them into the Liquor to stand in Digestion fourteen Days. Then again express the Juice, gently Evaporate it to a due Consistance, and put it up for Use.

Its

Its Vertues are the same with the former.

Its Dose is from ten, to fourty or fifty Drops.

Liquid Laudanum, with Tiniture of Tartar.

TAke choice Opium two Ounces, Saf-
fron one Ounce, Cinnamon two
Drachms, Nutmegs and Mace, *ana* one
Drachm. To these Ingredients in a Ma-
tras, put twenty four Ounces of Tin-
ture of Tartar; make the Matras a dou-
ble Vessel; Lute well the Joints, and set
them in a Heat of Digestion three Days,
shaking them every Day. Then open the
Vessel, and add to the Mixture two Ounces
of Juniper-Berries bruised; Let it
stand in Digestion three Days longer,
then let it cool, and press it through
Flannel. Put the exprest Liquor into a
Cucurbit, and with its Head and Recei-
ver Luted; set it over a gentle Fire of
Ashes; draw off eight Ounces of the Spi-
rit; let that which remains cool, and
decant it gently from the Fœces, into a
Vial well stopt, which keep for Use.

Its Virtue and Dose the same with the
fore-going.

Dr.

Dr. Sydenham's *Liquid Laudanum.*

TAKE Select Opium two Ounces, Saffron one Ounce, Cinnamon and Cloves powdered, *ana* one Drachm; put them in a Matras, and pour upon them one Pint of good Canary-wine; let the Matras be fitted for Circulation, and set them in good Heat of Digestion for three or four Days; then press them through Flannel; let the Liquor settle, and by gentle Inclination pour it into a clean Vial, and keep it for Use.

Its Operation the same with the foregoing.

Its Dose is from ten to fourty or fifty Drops.

Liquid Laudanum, with sweet Spirit of Nitre.

TAKE two Ounces of the best Opium, which slice, and put into a Matras, with one Ounce of Saffron; and to them one Pound of *Spiritus Nitri Dulcis*; invert into the Mouth of the Matras another Glass; Lute it, and set it in Digestion five Days (shaking it about every

every Day) then let it cool, and drop into it (by degrees) one Ounce and an half *Sal Volatile Oleofum*. When the Fermentation is over, Stop and Lute it up again, and let it stand three Days longer in Digestion: Then let it cool, and set it inclining to settle, and gently decant it into a Vial for Use.

It is an excellent and certain Anodine, and a great Expeller of Wind, and seldom or never, that I have yet heard of, offends the Stomach or Bowels of the Patient.

Its *Dose* is the same with the former.

*Liquid Laudanum, made with the
Volatile Oily Salt.*

Take four Ounces of the Extract of Opium, put it in a Marble Mortar, grind it with half a Pound of Tincture of Tartar, which must be put to it by two Ounces at a time, grind them till the Opium is well mixt with the Tincture of Tartar; then put them into a Matras, and put to them one Pound of *Sal. Vol. Oleofum*, upon which you must drop half a Drachm of sweet Spirit of Nitre; shake them

them well together, which will produce a little Fermentation; when that is over, make a Circulating Vessel of the Matras, Lute the Juncture well with Bladder; and set it in a gentle Heat of Digestion six Days, shaking it about every Day.

Then let it settle, and decant into a clean Vessel, both which keep well stopt for Use.

It is an Excellent Laudanum, a certain Sudorifick, and a great Expeller of Wind.

Its Dose is from ten, to thirty or forty Drops.

Matthews his Pill.

TAke of the Extract of Opium, of Black Hellebore, of Liquorish, and the *Corrector*, or Sope made with Salt of Tartar and Oil of Turpentine, as before-mentioned, *ana* four Ounces. Let the Hellebore and Liquorish be made into Subtle Powder; beat and mix these four Ingredients very well; then with two or three Ounces of this Mafs, mix two Ounces of good *English Saffron*, cut in very small pieces, and beat them well together,

ther, till the Saffron is perfectly mixed with the Mass, so that no part of it is discernable from the rest: Then beat and mix that as well with the rest of the Mass. If the Mass be too dry, you may mix with it some of the Oil which comes from the Sope, which it spues out when it stands by a long time; or in its stead so much Rectify'd Oil of Turpentine as is sufficient to make it into a Mass fit to form into Pills. Then put it into a wide-mouth'd Glas, or Gally-pot, ty'd over with a Bladder or Leather.

It is Diaphoretick, Anodine and Diuretick.

Its Dose is from two, to five or six Grains.

Dr. Starkey's Pill.

TAKE Extract of Opium four Ounces, Nutmegs and Mineral Bezoar. *ana* two Ounces; Saffron and *Virginia*-Snake-Root, *ana* one Ounce; beat the Nutmegs and Saffron together into a Paste; so that the Saffron cannot be discernably distinguish'd from the Nutmegs. Also let the Mineral Bez. and Snake-Root be in Impalpable Powder. Then mix all together, with half a Pound of the *Corrector*, *half*

half an Ounce of Oil of Sassafras, and two Ounces of Tinct. of Antimony ; let them all be well Incorporated, by beating in a Mortar : Then keep them in a Glass, or Gally-Pot, ty'd over with Bladder and Leather for Use.

This I had from the Ingenious Dr. Starkey's own Mouth, in the Year 1665. a little before his Death, who then told me, He gave *Matthews* the former for a little Money ; but this is it which he successfully made use of himself.

It is both more Diaphoretick, and a greater Anodine than the former ; and I have heard it affirm'd by several Gentlemen, who have made use of it in their Practice, to be the best Laudanum they ever met with.

Its *Dose* is the same with the former.

T *Observations*

Observations.

Extract of Opium. **T**HAT the Extract of Opium may as well be made with Brandy, or Proof Spirit, as with Water and Spirit of Wine, there being Water enough in either of them to Dissolve that we call the Spirituous Part of Opium; and also Spirit enough to dissolve the more Terrestrial Resinous Part: But be careful in drying it into an Extract that you do not burn it.

Compound Extract of Opium. When you put the Extract of Opium to the Tincture of Saffron, Castor, and Nutmegs; stir them well together till the Extract and Tinctures be Incorporated; and likewise be careful to prevent burning the Extract.

Laud. Liq. Cydoniæ. The Yest does often make the Medicine muddy, and therefore I substitute in its place two Ounces of Juniper-Berries, which renders the Laudanum more pleasing to the Eye, and takes off its gripping Quality.

Laud. Liq. Tartarijæ. Of late I have put in the Juniper-Berries with the Saffron, Cinnamon, Nutmegs, and Mace, and digested them three or four Days, then prest them through Flannel,

Flannel, decanted that Liquor, and when settled, put to the Tincture one Ounce, or six Drachms of the Extract of Opium; Incorporated them well, and Distil'd off eight Ounces of the Spirit.

The Canary-Wine will endure some- *Laud. Liq.*
thing a stronger Heat of Digestion than *Sydenham*.
Spirit of Wine, or Tincture of Tartar; because there is not Spirit enough in the Wine to Extract the Resinous Part of the Opium. If after three or four Days Digestion of the other Ingredients you press it out, let it settle, pour it off by gentle Inclination, and then put to it one Ounce, or six Drachms of the Extract of Opium, you will better perform the Operation.

If you add two Ounces of Juniper Ber- *Laud. Liq.*
ries to the Saffron, the Medicine will be *cum Spir.*
a greater Carminative, and if instead of *Nit. Dulc.*
Crude Opium, you take the Extract, and proceed as in the former Observation, you will the better succeed.

If you Distil the Oil of Turpentine, with which you make the Sope, from *Starkey's* *& Mank.*
Aromatick Herbs and Seeds, *viz.* Laven- *Pill.*
der, Mint, Rosemary, Marjoram, Car-
raway-Seeds, and Juniper-Berries, the *Landauum* will be made more grateful.

C H A P. XVI.

Of Essential Oils, and Fixed Salts.

Essential Oils are such as retain the Smell and Taste of the Spices, Gums, Herbs, Flowers, Berries, Seeds and Woods, from which they are drawn, *viz.* Cinnamon, Cloves, Nutmegs, &c. Benjamin, Balsam *Peru*, Ammoniacum, Galbanum, Capivii, Turpentine, &c. Mint, Balm, Marjoram, Wormwood, Pennyroyal, Rosemary, Sage, Camomel, &c. Anni-seeds, Coriander-seeds, Caraway-seeds, Cumin-seeds, Sweet Fennel-seeds, &c. Juniper-Berries, Bay-berries, &c. Rhodium, Sassafras, &c.

The Fix'd Salts are Extracted out of the Ashes of the Woods and Plants.

The manner of Distilling Essential Oils.

Take what quantity of any Spice, Gum, Berry, Seed, Herb or Wood you please, such as are proper to be bruised

bruised or powdered, let them be put so into a Copper-Still, and to them put eight or ten times their weight of common Water; Lute the Head to the Still, and its Refrigeratory or Worm, make Fire under it to make it Boil, and in a little time the Water and Oil will run into the Receiver, which we call a Spout Receiver, such as the Figure at the beginning represents; when you apprehend that all the Oil is come off, hold a Spoon under the Nose of the Worm, and if you perceive any Oil comes with the Water into the Spoon, continue the Fire longer, if no Oil appears in the Spoon, let out the Fire, and separate the Water from the Oil.

Observe, First, Few of these Oils are worth Distillation, except in great quantities, that is to say, several Still fulls.

Secondly, That you watch it at its first beginning to Distil, to prevent its boiling over; and if you think the little Stream runs too fast through the Worm, open the Door of the Fire-hole, and that will a little allay its vigour; if it be not sufficient, interpose a Fire-shovel between the Fire, and the bottom of the Alembick, so as to keep it running in a small Thred, and after the first half Hour of its working, you may be more bold with the Fire.

T 3

Thirdly,

Thirdly, That you leave Water enough in the Still to secure the Matter in it contained from burning.

Fourthly, That you return the Water you Distill'd off upon the fresh Matter in the Still, so long as it is the same Spice, Wood or Herb you drew the first Water from; for that Water being fill'd with some Oily Particles of the Vegetable from which you drew it, you will have by returning it, more Oil from the said quantity of Wood, Seeds, or Herbs, the Second Distillation than you had the First.

Fifthly, Also observe, That the Oils of Cinnamon, Cloves and Sassafras, being more Concentrated and Compact than the other, sink to the bottom of the Water, and all the rest of the Essential Oils swim upon the Surface of Water.

Sixthly, Observe, That the Oils of Anni-seed, Sweet Fennel-seed, and Roses, will coagulate; therefore you ought so to order your Matter towards the latter end of your Distillation, to keep the Worm warm to the very Nose of it, by which means the Coagulated Oil melts down into the Receiver.

*The Fix'd Salts of Plants are made out
of their Ashes. For Example :*

Take dry Wormwood, what quantity you please, burn it upon a clean Hearth; rake the Ashes so long as any Fire appears amongst them; put those Ashes into an unglased Pan, which set in a Calcining Furnace; make Fire about it till the Pan is red hot, where keep it (continually stirring the Ashes) till they are perfectly Calcined into whitish gray Ashes, without any blackness: Then put them into a clean Pan, and pour hot Water to them; when that Water is sufficiently Impregnated with the Salt, Filter and Evaporate to dryness; and so continue the Extraction, Filtration and Evaporation, till the Ashes are left insipid.

CHAP.

C H A P. XVII.

Of TURPENTINE.

IT is of a Balsamick Consistance and Nature, and comes by Incision from several kinds of Trees, *viz.* the Turpentine Tree in the Island of *Chios*, from which the *Chios* Turpentine proceeds; also from the *Pine-Tree*, the *Larix* and *Firr*.

It is Diuretick, and given in *Gonorrhœa's*, Ulcers of the Reins, Bladder and Matrix.

Its Essential, or *Aetherial* Spirituous Oil, is drawn in Water, in a large Copper Still, as other Essential Vegetable Oils are.

From the *Colophone* which remains in the Copper-Still, may be Distilled by Retort, its Yellow Oil, and Red Balsam, as followeth:

The

The Yellow Oil, and Balsam of Turpentine.

TAKE the *Colophone* which remains in the Copper-Still, after the Spiritual Oil is Extracted, what quantity you please, break it in little pieces, and put it into a Retort not above half full; place it in a Sand Furnace; heat it gradually to the second degree of Fire, in which some Oil will drop into the Receiver; augment that Degree a little, and it will cause all the Oil to Distil; then change the Receiver, and urge the Fire to the third Degree, which will cause yellow thick Drops to Distil, with some Fumes; when the Fumes decrease, augment the Fire to the Fourth Degree, which will drive over its Red Balsam; when the Receiver begins to cool, and the Fumes disappear, let out the Fire.

By this Method you may Distil the Oil and Acid Spirits of Mastick, Frankincense, *Tacamahacca*, Gum Elemi, Labdanum, and all other Gums of this Nature.

C H A P. XVIII.

Of B E N J A M I N.

IT is a Resinous Fragrant Gum, which Distils out of a large Tree, growing in *Samaria*, and the Countries adjacent; Its greatest Consumption is by the Perfumers: Its Physical Use is to resist the Malignity of Humours. It is also Pectoral and Cephalick.

That which breaks Grey, and is full of white lucid Spots, is counted best.

The Tincture of Benjamin.

Powder four Ounces of Select *Benjamin*, put it in a Matras, and put to it Tartaris'd Spirit of Wine, one Pound; fit the Matras for Circulation; Lute the Joint, and set it in warm Sand three or four Days, now and then shaking it about; in that time it will acquire a fine Tincture, which Decant, and keep for Use.

Its chief Use is to smooth the Skin, and take away Spots out of the Face. One Drachm

Drachm of it being put into four Ounces of clean Water, turns it white ; this is call'd *Virgins Milk*. It is also us'd in Asthma's, and other Diseases of the Lungs.

Its Dose is from twenty, to sixty or seventy Drops.

Flowers of Benjamin.

PUT into a Subliming-Pot (of which you have the Figure in the Cuts) two or three Ounces of *Benjamin* in gross Powder, set on its Cover, without Luting, and keep it in the Second Degree of Fire in Sand, or immediately over a very small Fire of Charcole ; the Flowers will presently begin to rise into the Cover, which once in an Hour, or Hour and a half, must be taken off, and wip'd out upon a clean Sheet of Paper with a Feather ; you ought to have two Covers to one bottom, that you may clap on one as soon as the other is taken off. When you see the Flowers begin to rise yellow, take the melted *Benjamin* out of the Pot, with a Spoon, and put into it more powdered *Benjamin*, as you did at first, and so proceed till you have as many of the Flowers as you desire.

The

The Oil and Spirit of Benjamin.

TAKE of the black melted *Benjamin*, (which you took out of the Pot after the Sublimation of the Flowers) one Pound ; put it into a Retort, which place in a Sand Furnace ; cover it well with Sand ; Lute on its Receiver, and make Fire of the first Degree for one Hour ; then increase to the Second, in which you will have some Oil and Spirit, with some discoloured Flowers ; augment the Fire to the third Degree, and at last to the Fourth, till no more Fumes appear, and you will have a blackish Oil, with an Acid Spirit, and the neck of the Retort will be fill'd with the discolour'd Flowers, which you may take out, and put upon clean brown Paper to suck up the Oil. These Flowers (though not so beautiful) are as good for Use as the former ; and though both the Oil, Spirit and Flowers have acquir'd (at present) an Empyreumatical Scent, in six or eight Months time their Fragrancy will return.

The Oil is a Balsam for Wounds. The Spirit is Diuretick.

Its *Dose* is from ten to fifty Drops, in any proper Vehicle.

After the same Method you may Distil the Oil, Spirit, and Volatile Salt of *Tolu* and *Peru*, &c.

Observations

Observations.

Y
OU may add to the four Ounces of *Benjamin*, one Ounce of Storax, and *Tincture of Benjamin*. also one Drachm of the Balsam of *Peru*; they will not only render the Scent more grateful, but also add to the deepnes of the Tincture.

You must take care that the Fire is not too big, if it be, it forces up some of the *Flowers of Benjamin*. Oil with the Flowers, and discolours them.

If you have the quantity of two or three Ounces of the black Oil, you may put it *oil of Benjamin*. into a Cucurbit, which is capable of holding a Gallon of Liquor, in which you may put two or three Quarts of Water to the Oil, and set it in a Sand Furnace, Luting on its Head and Receiver, and give it gradual Fire till the Water is ready to boil. In this Heat the Spirituous Part of the Oil will Distil with the Water, of a fine Amber Colour, and a Fragrant Scent.

It is a good Internal Medicine, a powerful Diuretick, and a Specifick against the Stone and Gravel in the Reins and Kidnies.

Its *Dose* is from three to fifteen Drops, in a little refin'd Sugar. The Spirit may (before the Rectification) be separated by Filtration.

CHAP.

C H A P. XIX.

Of C A M P H I R E.

IT is a Volatile Sulphureous Substance, which drops from a large Tree growing in the Island of *Borneo* in the *East-India's*. It is separated from its Dirt by Sublimation, and is brought to us in a Transparent Friable Cake; The clear, white, and such as is hard to quench, when set on Fire, is the best. It is counted a Volatile Alkali, saturated by Nature with its own Fatness.

It is Anti-Pestilential, and Procreative, (though some have Asserted the contrary) good against Fits of the Mother, and a great Smoother and Beautifier of the Skin.

The Oil, or Dissolution of Camphire.

TAKE clear white Camphire, four Ounces, powder it grossly, and put it into a Matras; pour upon it eight Ounces of Spirit of Nitre; set it in a very gentle Heat of Digestion, often shaking it; and in two or three Hours time it will dissolve into a clear Liquor swimming

ming above the Spirit of Nitre, which you may separate as you do other Oils. Its Use is chiefly External.

If it be dropt into Rose-water, and with it washt from its Acrimony, it reassumes its Body, smooths and whitens the Skin.

Compound Oil of Camphir.

TAKE of the aforesaid Oil four Ounces, of the Rectify'd Oil of Amber, Juniper-Berries, Oranges and Lemons, *and* three Ounces; put them into a Matras, and let them stand in Digestion till they are united, which will be in three or four Days: But if you will more strictly Unite them, put into a large glas Body so much Water, as to fill it two Thirds; put to it the Compound Oil; set it in a Sand Furnace, with its Head and Receiver, give it Fire gradually till the Water simper and bubble; continue that Fire till all the Oil is Distill'd. If any of the Camphire remains coagulated, either in the Head or Receiver, return it, (with all that Distilled) into the Body again, and Distil as before: Repeat this Operation two or three times, and the Oils and Camphire will become inseparable.

Observations.

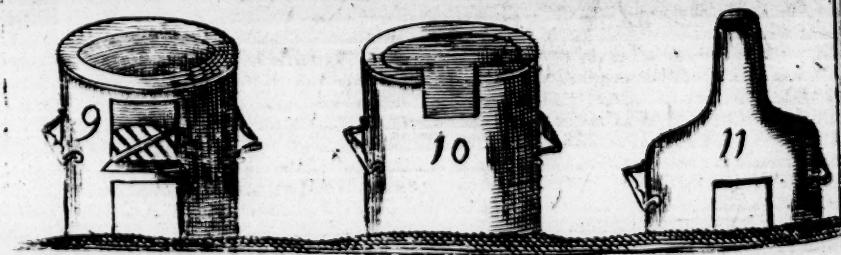
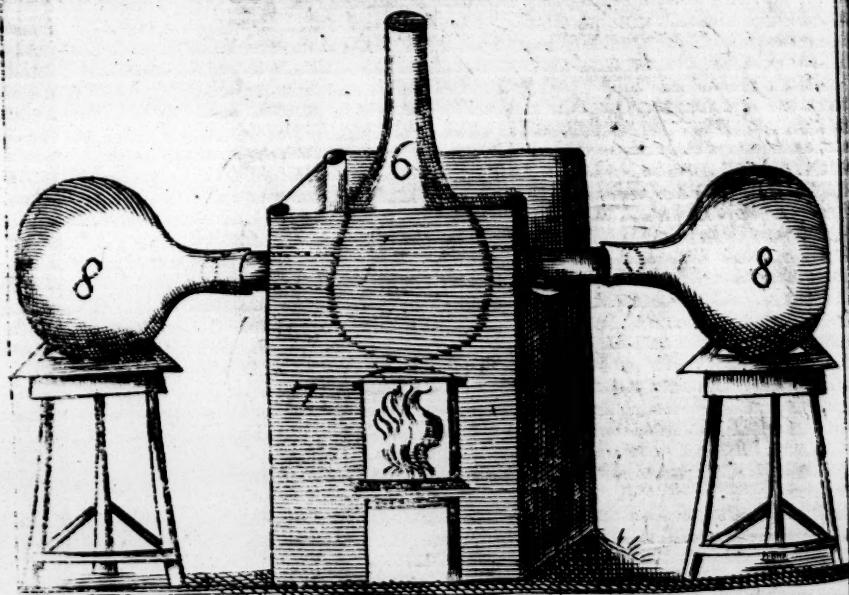
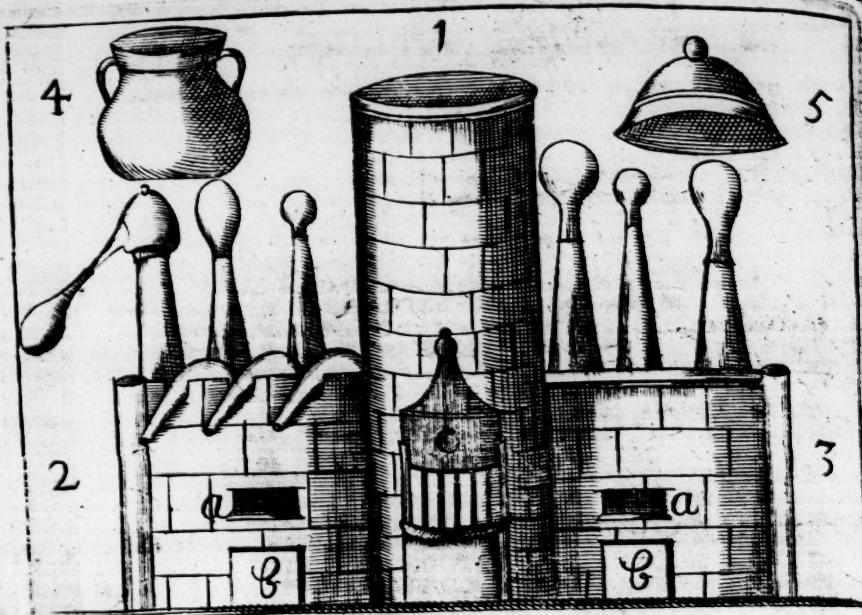
Observations.

*Oil of Cam.
by Dissolut.*

IF you drop this Oil into Water, it reassumes its Body, not being Subtilized into an Essential Oil, but only dissolved by so much of the Nitrous Spirit, as it is capable of receiving.

*Compound
Oil of Cam.*

By repeated Distillations it will perfectly Unite with the other Oils, and become Essential.



The Explanation of the Figures.

- 1 The Tower of the *Athanor*.
- 2 The dry Bath of the *Athanor*.
- 3 The moist Bath of the *Athanor*.
- 4 A little Pot to place on the top of the Tower, wherein you may Boil, or Stew any thing at your pleasure.
- 5 The Cover of the Tower when the Pot is removed.
- a a The Holes by which you may cleanse the Flue when there is occasion.
- b b The Ovens, wherein you may Bake Puddings, Custards, Apples, &c. in which you may also Hatch Chickens.
- c An Iron Door to slip up and down, as occasion requires, when you would Roast a bit of Meat pull it up.

The Furnace call'd an *Athanor*, was invented to keep a constant Heat for Fourteen Days, a Month, Twelve Months, or more, as some Chymical Operations require, which may be augmented or decreased, by opening or shutting the Registers, as you please, and according to the Magnitude of the Tower, requires no Attendance above once in twenty four, fourty eight, or one hundred Hours.

- 6 The Neck of the Vessel which contains the Matter you design to Distil, or Sublime.
- 7 The Body of the Furnace.
- 8 The Ballons or Receivers.

This

This Furnace is to Distil any Cumbustible Composition of Nitre, Sulphur, Antimony, &c. by Projecting a little at a time into Fig. 6. and presently stopping the Orifice with a fit Stopple.

- 9 The lower Part of the Furnace from the Ash-hole, to the upper Part of the Fire-hole.
- 10 The middle Part of the Furnace which contains the Distilling Vessel.
- 11 The Dome, or upper Part of the Furnace.

This is a Portable Furnace, easily removed, in which you may Melt, or Distil in Balneo, Sand, or naked Fire, as you please to order it. The out-side of the Furnace may be made of Copper or Iron, and it may be Lin'd with a Lute, or Fire-stone.

A

Compleat Course

O F

Chymistry.

P A R T III.

Of Animals and Insects.

I Shall here, in this Third and Last Part, speak only of those Animals, and such Parts of them, as we make use of in Chymistry, as *Sal Armoniack*, *Urine*, *Blood*, *Bones*, *Horns*, *Hoofs*, &c. Also, *Serpents*, *Vipers*, *Wood-Lice*, *Pismires*, &c. And First,

u

CHAP.

C H A P. I.

Of Sal Armoniack.

SAL Armoniack is brought from Alexandria in Egypt, Venice, Antwerp, &c. It is either *Natural* or *Artificial*. The *Natural* is found in very hot Countries, where the Earth has Imbibed the Urine of Animals; but of this very little is brought to us. The *Artificial* is made of Urine ten Pound, Sea Salt two Pound, and the Soot of Wood one Pound: These are boiled into a Mass, and Sublimed into such Cakes as come to us.

Purification of Sal Armoniack.

Dissolve what quantity you please in warm Water, Filter and Coagulate, or only Evaporate to a Pellicle, and set it to shoot in a cold place; either of them will render you a very white Salt.

Its

Its *Operation* is Sudorifick and Diuretic; and said to be good in Malignant Fevers; also in Quartane Agues; Provokes Womens Terms, Resists Putrefaction, and therefore given in the time of the Plague.

Its *Dose* is from twenty Grains to one Drachm and half.

Sublimation of Sal Armoniack.

PUT what quantity of Sal Armoniack (in gross Powder) you please into a Retort, or Matras, with its Head; place it in a Sand Furnace; fit a Receiver to it, and give gradual Fire to the Third Degree, in which you may keep it till all is Sublimed, which you will perceive by the Sublimate rising clear above the Sand. Some Sublime it with common Salt, and others with Burnt Allum, but they serve for no other Use than taking up room in the Glass, which must not be quite half full. Sal Armoniack being Sublimed with common Salt, is that which Mr. Lemery calls Flowers of Sal Armoniack.

Its Use the same of the Purify'd.

Spirit of Sal Armoniack, with Salt of Tartar.

TAKE of Sal Armoniack, and Salt of Tartar, *ana* one Pound; Powder and mix them well, and put them presently into a Cucurbit (or rather into a Retort, because there is but one Joint to close) sprinkle it with twelve Ounces of Flegm of Wine, or eight Ounces of Spring or Rain-water; place it in Sand and Lutting well its Receiver with Bladder, give it Fire of the First Degree one Hour and an half; increase it to the Second, and keep it so two Hours; go on to the Third, and keep it there till you see the Salt begin to dissolve in the Neck of the Retort, or Head of the Cucurbit: Let all cool, and put the Spirit into a Vial by it self, and the Salt in another by it self.

Its *Operation* is Sudorifick and Diuretic.

It is given in Epilepsies, Palsies, Small-Pox, Malignant Fevers and Plague.

Its *Dose* is from ten Drops to one Drachm.

Spirit of Sal Armoniack, with Quick Lime.

TAKE of Sal Armoniack, in fine Powder, one Pound, of *Calx Vitre*, which has lain in the Air till it is broken into fine Powder, three Pound; mix them well, and put them presently into a Retort, to which put two Pound of River, Rain, or Spring-water; shake it, to mix the Powder and Water, and place it in a Sand Furnace, Lute well the Juncture of the Receiver, and give Fire of the First Degree one Hour and a half; augment it to the Second, where you may keep it till about twelve Ounces of Spirit be Distilled. Then take it off, and keep it in a Vial well stopp'd for Use.

You may Lute on the Receiver again, and draw off three or four Ounces more, which will be pretty strong.

Its *Operation, Use, and Dose*, the same with the other.

It is accounted the better Spirit to smell to, being more Penetrating; but by reason of its heat, it is not thought so good for Internal Use.

The Spirit and Volatile Salt of Sal Armoniack, which Mons. Lemery calls, Sweet Spirit of Sal Armoniack.

Take of Sal Armoniack, and Salt of Tartar, *ana* one Pound, make them into fine Powder, and mix them; put them into a Cucurbit, fit a Helm to it, with a wide Beak, and likewise a Receiver to the Helm; Lute them well with Bladder dipt in the white of an Egg, well beaten with a little Water; place them in a Sand Furnace, and give Fire of the First Degree two Hours; the Salt will rise into the Head, and some Spirit drop into the Receiver: Raise the Fire to the Second Degree, and keep it so four or five Hours, in which time all the Volatile Salt will be Sublimed: Let all cool, and take off the Head and Receiver, put the Spirit into a Vial well stopt, and the Salt in another also well stopt. If you would have the Salt converted into Spirit, it is done by three or four Rectifications.

It is of the same Use with the other Spirits of Sal Armoniack, and may be given in a greater Dose.

The

The Acid Spirit of Sal Armo-niack.

Take the *Caput Mortuum* of the former Spirits one Part, and of Fullers Earth three Parts, both beaten into fine Powder, and well mixt; put them in an Earthen Long-Neck, and place it in a Reverberatory; Fit and Lute on the Receiver; make Fire of the First Degree for one Hour, increase it to the Second, and keep it there three Hours longer, and so to the Third and Fourth, till the Receiver comes clear without Fumes: Then let all cool, take off the Receiver, and put up the Spirit for Use.

It is of the same Nature and Use as the Spirit of Common Salt, &c.

The Diuretick Salt.

Take the grey Salt which remains in the Vessel after Distillation, of either of the Spirits made with Sal Armo-niack and Tartar, Dissolve, Filter and Evaporate, either to a Pellicle, and so to shoot into Crystals, or to a dry bottom.

Its *Operation* is Diuretick and Diaphoretick. It works by Urine very powerfully, from which it takes its Name.

It is given in the Stone and Gravel, also successfully in intermitting Fevers.

Its *Dose* is from ten Grains to one Drachm, in any proper Vehicle.

Sal Volatile Oleofum.

TAKE of Sal Armoniack and Salt of Tartar, *ana* half a Pound, powder them apart, and mix them; put the mixture into a Retort; put also into the Retort half an Oun. of *Marum Syriacum*, and of Tartaris'd Spirit of Wine one Pound and a half, Impregnated with these Essential Oils, *viz.* Cloves half a Drachm, Cinnamon one Scruple, Nutmegs two Scruples, of Marjoram, Lemons and Oranges, *ana* one Drachm; put to them of clean Water two Pouad, and set all in a Sand Furnace; Lute on its Receiver, and give Fire of the first Degree one Hour and a half; increase to the Second, in which continue it five or six Hours, or until you have in the Receiver, about a Pint and a half of Spirit and Salt.

You

You may Aromatize it with Essence of Ambergreece, to your pleasure.

This Medicine is differently compos'd, as the Operator pleases.

Its *Operation* is Diaphoretick and Diuretick.

It is given in all Pains and Diseases of the Head: It is good in Palsies, Lethargies, Scurvy, Pestilential Fevers, Suffocation of the Womb, and in all Hysteric Cases.

Its *Dose* is from ten, to sixty Drops.

The hidden Spirit of Sal Armoniack.

Take of pure Spring-water 5 Pound, Pot-ashes two Pound, Sal Armoniack one Pound; put them into an uncut Body, and stop it with a Bolt Head, firmly Luted; let them stand three or four Days in a gentle Heat of Sand to Digest, shaking them two or three times every Day. Then let the Mixture settle; Filter, and keep the Water for use.

'Tis said to open Obstructions of the Liver and Spleen, Provoke the Terms, Sweeten the Blood, and to give Ease in the Gout.

Its *Dose* is from fourty, to sixty, or one hundred Drops.

The

The double Menstruum of Sal Armoniack.

Reduce Sal Armoniack and *Calx Vive*, into fine Powder, *q. v.* mix them in equal quantities, and let them run, *per deliquium*, in a moist place.

It is of the same Use with the foregoing Spirit.

Its Dose is from ten Drops to one Drachm.

Note, That it readily Dissolves Mercury Sublimate into a clear Water, which may be of Use to the Curious.

Distillation of Urine.

Take Urine of Sound Young Men, newly made, as much as you please, put it into an Iron Kettle, and Evaporate it to the Consumption of one half, in a gentle Heat; put the Remainder into a Stone Bottle; stop it well, and set it by to Ferment for about two Months. Open the Bottle, and if you find it smell quick and strong, put it into a large glass Retort;

tort; Lute on a Receiver, and give Fire of the First Degree for an Hour; then increase to the Second, which will raise its Salt and Spirit; continue that Degree till you find the Salt begin to dissolve, and let all cool. Then take off the Receiver, and put all you find there into a Cucurbit; set it in Sand; Lute on its Head and Receiver, and give a gentle Heat at first, and the Salt, and some part of the Flegm, which we call Spirit, will rise. Continue the Fire till you see the Head well lin'd with Salt, which when you perceive to decrease, let all cool, and put what you find in the Receiver into a Vial well stopt.

It is Diaphoretick and Diuretick, and given in Intermitting and Malignant Fevers.

Its *Dose* is from five to fifty Drops.

But however, as to the Evaporation, observe to do it by a gentle Heat, lest some of its Volatile Salt, by too great an Agitation, should fly before its Fermentation. The use of this Fermentation is to separate the Flegm, which would take up too much room to no purpose.

Secondly, If you find not the Urine sufficiently Fermented, which you may know

know by its quick Scent, stop it again, and let it stand longer.

Thirdly, If you desire the Salt and Spirit apart after the Rectification, then pour off the Spirit into a Vial, and tye a double Paper over the Mouth of the Receiver; set it down-wards, and let it drain till the Salt is dry: Then scrape it off from the sides with a crooked Hoop-stick, and put it into a Vial well stopt.

If you desire yet a greater quantity of the Salt, put both it and the Spirit together, into a long Body; Lute on the Head and Receiver, and let it stand in a digesting Heat of Sand, that the Salt may gently Sublime.

I have made the Spirit of Urine without Fermentation, by Evaporating to the Consistence of a Syrup, and giving it gradual Fire to the Third and Fourth Degree. In this Operation the Flegm comes first, and then some Volatile Salt; afterwards more Volatile Salt will appear in white Fumes, with the Spirit, and a little stinking Oil, which must be separated from the Salt and Spirit before Rectification. After one Rectification you may separate the Volatile Salt and Spirit, as in the former, but I do not esteem it of equal Goodness with the

the Fermented Spirit, because all the Salt of Urine is Volatized by the Fermentation. In the *Caput Mortuum*, as some call it, you will find a strong Lixivious Salt ; and if the Volatizing Fix'd, or Lixivious Salts deserve that Encomium the most Celebrated Authors give of them, the Salt of Fermented Urine must be the best Medicine ; and indeed there is a perceptible difference betwixt them, the Fermented Spirit and Salt being more Pleasant and Penetrating, both in Smell and Taste, than the Unfermented.

Observations.

*Observations.**Purificat.
Sal Armo.*

This Operation separates the accidental Dirt from the Salt, and renders it fit for Sublimation. If without this Separation you should Sublime it, the foul and dirty Sulphur would rise with it, and render it unfit for some curious Operations.

Spirit Sal Instead of a Pound of Salt of Tartar, *Arm. cum* you may take one Pound and a half of *Sal. Tart.* Pot-ashes, made clean by Dissolution and Filtration, and Evaporate it to drynes; it is of the same Use with Salt of Tartar.

Spirit Sal If the Lime be not a little quencht before 'tis mixt with the Sal Armoniack, the *Cal. Viv.* Spirit will fly with such violence, that it will be very troublesome to put it into the Vessel, and the most Essential Part will be lost.

Spirit Sal If you put half a Pound of Tartari'sd *Arm. Dul.* Spirit of Wine to the Salts, before Distillation, you will have a greater quantity of Salt, then can be produced without it.

Spir. Acid. This is the Spirit of common Salt *Sal. Arm.* which was before in the Composition of Sal Armoniack, but kept down by the Salt

Salt of Tartar, and therefore it requires as strong a Fire to Distil, as that of common Salt.

If after the Humidity is Evaporated, *Sal. Diure.*
you make too strong a Fire under it, you will burn and discolour it.

If you make it with the Spices and *Sal. Volat.*
Herbs, instead of the Essential Oils, it *Oleosum.*
will acquire a little Tincture, which by some is dislik'd, but I think it not the worse.

You may Dissolve and Filter the Salts *Spir. Sal.*
apart, and then put the Dissolutions to- *Ar. Occult.*
gether, in a Glass big enough for the Spirit to Circulate.

Let the Lime be two or three Days *Menstru.*
expos'd to the Air, before you mix it *Duplicat.*
with the Sal Armoniack, otherways a great part of the Volatile Spirit will evaporate, which ought to be United with the Salt.

The Distillation of Harts-Horn.

Take that which we call the Velvet-Head, in the Spring-time, while it is soft, cut it in little pieces, and put them into a Cucurbit; Lute on its Head and Receiver; place it in *Bal. Mar.* and Distil a Water from it.

Its accounted good to help forward the Births of Women, and to resist Malignant Humours in Fevers.

Its *Dose* is from two, to four or five Ounces.

The Spirit, Volatile Salt, and Oil of Harts-Horn.

Take that which remain'd in the Cucurbit after the fore-going Distillation, or pieces of solid Harts-Horn, as much as you please; put them into an Earthen Retort, or Iron Pot, either of which may be fill'd two Thirds: If it be an Iron Pot, you must fit to it a Copper-Head, with its Receiver; if a Retort, only a Receiver: Place them on a naked

ked Fire, which increase gradually, so as to keep some Fumes in the Receiver, but not to force them so violently, as to blow off, or break it; at last give the Fourth Degree, in which keep it till no Fumes appear: Then let all cool; take off the Receiver, and put the Oil and Spirit into a Separating Glass; wash out the Salt which remains behind with clean Water, and put it to the Oil and Spirit. Then let it stand twenty four Hours to separate, and draw out the Spirit; then put them into a Cucurbit, or long boll'd Retort, in a gentle Heat of Sand to Rectifie; the Salt (and some part of the Liquor, commonly call'd Spirit) will first ascend; the Salt will increase till the Neck of the Retort and Receiver is well charged. When the Salt begins to dissolve, take off the Receiver, and separate the Spirit from the Salt, as before directed in that of Urine. If after Rectification any Oil appears upon the Spirit, separate it by a Glass, and keep the Spirit in a Vial well stopt.

It is Diaphoretick and Diuretick.

Its *Dose* is from ten Drops to fourty or fifty, in any convenient Vehicle.

After the same manner we make the Spirit, Oil, and Salt of *Human Skulls* and *Bones*, *Vipers* or *Serpents*, *Ivory*, *Hoofs*, *Hair*, &c.

The Aromatick Spirit of Harts-Horn.

Take the Spirit, Oil and Salt of Harts-Horn, after the first Distillation, and Rectifie them; put them so Rectify'd into a clean long boll'd Retort; to each Pound of which put two Ounces of *Sal. Vol. Cleof.* and four Ounc. of *Spir. Nit. Dulc.* shake them well together, and set them in a very gentle Heat of Sand; Lute on a Receiver, and continue the Fire (not exceeding the second Degree) till all be Distill'd: In the Receiver you will have a Spirit which has quitted its Empyreum, and receiv'd a penetrating, but a very pleasant Scent.

It is a powerful Diuretick and Diaphoretick; it wonderfully expels Wind from any part of the Body, and by many Experiments found to be endu'd with all the Vertues attributed to *Godard's* Drops.

Its *Dose* is from fifty, to sixty or sevnty Drops, in any proper Vehicle.

Observations

Observations.

IF you Distil any Animal Spirit in an Iron Pot, with a Copper-Head, that Head ought to be kept only for such use.

If you would have that we call Spirit and Salt absolutely free from the Oil, to one Pound of the Spirit (after the second Rectification) you may put of Bones, or Horns, Calcin'd to whiteness four Ounces, and Distil in a gentle Heat of Sand.

If you desire all the Salt in a dry form separated from the Flegm, put the aforesaid Mixture in a Matras, or long Body, with a Head and Receiver fitted to them, and in a very gentle Heat of Sand, the Salt will be Elevated into the Head and Neck of the Body or Matras : For know, that the Volatile Salt of Animals are properly their Spirits, and what we call Spirits, is no other than part of the Volatile Salt dissolv'd in the Flegm, which nevertheless has the same Vertue of the True Spirit, or Volatile Salt, but given in a greater Dose.

If you Rectifie the Aromatick Spirit *Spir. C. C.* once more, its pleasant Smell will be augmented. *Arom.*

To Elixirate, or make Essential Animal Vol. Salts.

Take half a Pound of Volatile Animal Salt; put half a Pound of Tarraris'd Spirit of Wine to it, and it will Coagulate, and is that which *Helmont* calls his *Offa Alba*; Put that Salt into a Matras, pouring upon it pure and strong Distill'd Vinegar, by little and little at a time, till the Ebullition ceases; Then set it in a gentle Heat of Sand, with its Head and Receiver well Luted; there will first come a subtle Liquor, dropping from the Nose of the Alembick; after that will sublime into the Head, a most glorious Salt, white as Snow, in figure like large Flowers of Benjamin, of a quick, pleasant, penetrating Scent, and a very agreeable Taste.

In this Operation you must have a watchful Eye; as soon as you perceive the Crystals to fall or relent in the Head, draw the Cucurbit out of the Sand, and take off the Head and Receiver; put the Spirit and Salt apart, into Vials, and carefully stop them: In the Cucurbit you will find a very stinking Flegm, which may be thrown away.

This is that Animal Salt I Unite with the

the Salt of Tartar, that so readily dissolves in Tartaris'd Spirit of Wine, before-mentioned, with which I Extract the Anodine Sulphur of Metals, and of them Compose that Surprizing Anti-Rheumatick Tincture,

Which Rectifies lost and deprav'd Appetites, restoring the Stomack to its true Tone, and preparing the Aliment for further Digestion, Cleansing the Blood of all the Corrosive Salts which occasion those Acute Pains in Rhumatisms, Gouts and Scurvies, &c.

It is a powerful Diuretick, and of Excellent Use in the Stone and Gravel, either in the Kidnies or Bladder, by dissolving and washing off that Petrifying Matter which is the cause of both.

By its gentle Diaphoretick and Anodine Quality, it quiets the *Archæus*, and allays the irregular Ferment in the Blood, by which means it becomes an Excellent Medicine in all Fevers; and by its Carminative and Sweetning Quality, gives present Ease in the Cholick, and all Gripings in the Bowels and Stomach.

In its Tast and Operation tis most
pleasant, and mixes with all Liquors
without Ebullition, Coagulation, or Pre-

cipitation. So much for the Anti-Rheumatical Tincture.

This Essential Animal Salt is Diaphoretick and Diuretick. Its *Dose* is from five Grains to one Scruple.

The *Dose* of the Anti-Rheumatick Tincture is from fifty to one hundred, or one hundred and twenty Drops, in any Liquor which is proper. My common Vehicle is Spring-water.

CHAP.

CHAP: II.

Of V I P E R S.

THE Viper is one of the Reptiles, but whether Animal or Insect I dispute not: The Creature is well known, and has a Skin scaly, and withal so very compact, that it permits little or no Transpiration of Spirits, which is the reason why it is able to live several Months without any other Nourishment than that of the Air.

As to the Story of *Pliny* about their Generation, that the Male puts his Head into the Mouth of the Female, which she bites off; that the young Vipers pierce the Womb and Sides of their Dam, and by that means revenge the Death of their Sire. Of their particular hatred to the Ash-Tree, that they will rather run into the Fire then come near it, and the like, I reject them as Fabulous.

Authors are of different Opinions about the manner of emitting their Poison; some Asserting it proceeds from the yellow Juice which often appears upon

X + the

the surface of the Wound ; and others from the Rage or Exasperation of the Animal. But my design being only to give such Antidotes and Medicines as are produc'd from them by Chymical Preparation, I omit all Disputes as Foreign to my purpose.

The Distillation of Vipers.

TAKE what number of Vipers you please, open and cleanse them from all Worms and Excrements, and the Females from their Eggs, which must be thrown away : Take out their Hearts and Livers ; dry them in the shade, separately from the Bodies, and when they are dry, cut the Bodies into small pieces, and fill a coated Retort three quarters full ; place it in a Reverberatory fit for the Retort ; Lute to it, its Receiver, which must be capacious ; cover the Furnace with its Dome, and make a gentle Fire under it for two Hours, in which time the greatest part of the Flegm will come off ; then increase the Fire to the second Degree for two Hours more, which will raise its Spirit and Volatile Salt ; increase it still to the Third, which will fill the Recipient with Clouds ; keep up that Degree

Degree till the Clouds seem to lessen in the Receiver; continue the increase of the Fire still, to the fourth Degree, and keep it there till all be come over, and the Receiver grows cool; then cease the Fire, and you will find the Flegm, Spirit, Salt and Oil, which must be Rectify'd as followeth.

Rectification of the Salt of Vipers.

PUT all that you find in the Receiver in a Long-bodied, un-cut Cucurbit; If more Salt adheres to the Receiver than the Liquid which Distill'd from the Vipers will dissolve, put in a little Water, and rinse all the Salt out into the Body; place it in *Balneo*, or a gentle Heat of Sand or Ashes; Lute on the Head with a Bladder daub'd with stiff Starch, and dipt in the Glear of an Egg. You may also Lute on a small Receiver to the Beak of the Alembick, and the Salt will Sublime into the Head, or upper part of the Body, distinct from the Flegm, and grosser part of the Oil, which must be kept in a clean Vial, carefully and exactly stopt for Use.

To

To this Salt many Vertues are attributed ; as that it gives Relief even to those Diseases which are most Refractory and Difficult to cure ; as Apoplexies, Lethargies, Convulsions, Palsies, and all other Diseases believed to have their Source in the Brain : Likewise in Distempers of the Breast ; as difficulty of Breathing, Palpitation of the Heart, Pleuresies, Soundings, &c. and particularly it opens the Obstructions of the Liver, Spleen, Misentery, &c. It dissipates all inward Imposthumes, and dislodgeth secret and unknown Pains, which have their Origine in the Spirits. It helps Digestion, and purifies the whole Mass of Blood, resolves and prevents Coagulations in all parts of the Body. 'Tis an excellent Remedy against all intermitting Fevers, particularly Quartanes. It works powerfully in the Distempers of the Matrix, and is an Enemy to all the Vices of the Skin, even to the Leprosie it self. But above all, a most certain Specifick against the Bitings of all Venemous Creatures. It is also a great Antidote against the Plague, and all Contagious and Epidemical Diseases, as the Measles, Small-Pox, &c.

Its

Its *Dose* is from ten Grains to two Scruples, in any proper Vehicle.

This Excellent Salt is also another Ingredient in the Anti-Rheumatick Tincture.

A Sudorifick Water of Vipers.

Take what number of Living Vipers you please; put them into a strong Earthen Body, tye a Hair-Cloth over its Mouth, such as Coarse Hair-Sieves are made of; fit and fasten a Head well to it, then place it in a *Balneo*, which gradually make to boil; this will Elevate a Water, which you will see drop into the Receiver; when the Drops cease to fall, let it cool, and take out the Water.

Its *Operation* is Diaphoretick, and 'tis successfully Exhibited in many Cases where the Salt is proper.

Its *Dose* is from twenty, to seventy or eighty Drops, in any proper Vehicle.

The

The Essence of Vipers.

Take of dry'd Vipers what number you please, cut them in small pieces, and put them into a Cucurbit, place it conveniently, and pour to it (by a little at a time) so much Spirit of Nitre as will dissolve them; commonly twelve Ounces of Spirit of Nitre will dissolve four Ounces of Vipers. When all the Spirit is put upon them, let them stand five or six Hours, and there will be a black Scum upon the Surface of the Dissolution, which must be taken off with a glas Spoon, or in defect of that, a clean Tobacco-Pipe. You will likewise find a little white Fœces in the bottom, which must also be Separated from the clear Dissolution; Pour the clear Liquor into a Retort, and by an Ounce or two at a time, put to it three times its weight of Tartaris'd Spirit of Wine, shaking them often about, as you mix them; place the Retort in a Bath of Ashes, and with a gentle Fire distil off the Spirit of Wine, which will be an excellent Dulcify'd Spirit of Nitre: To the black Matter remaining in the bottom of the Retort, put the same quantity of new Spirit of Wine Tartaris'd, and Distil it off, as you did the other; Put on again the same quantity

ity as before, and Distil in the same manner; and repeat this so often with new Spirit of Wine, till it has neither any Nitrous Smell, nor Acid Taste; keep that which remains in the Retort, to unite with the Volatile Salt, and Rectify'd Oil of Vipers, as followeth.

The Rectification of the Oil of Vipers.

Put the Oil and Flegm from which the Salt of Vipers was Sublimed, into a Cucurbit; let the Cucurbit be capable of holding two Gallons; pour to them one Gallon of clean Water, set it in a Sand Furnace; fit to it its Head and Receiver; give it a gradual Fire, till the Matter within the Body bubble; continue the Fire so, till holding a Spoon under the Beak of the Head, you perceive very little or no Oil swim upon the Water, which drops into the Spoon.

Then let all cool, and you will have Water, with the Ætherial Oil of Vipers, in the Receiver.

The

*The Union of the Volatile Salt,
Ætherial Oil, and the most Subtile
Particles of the Viper into an Es-
sence.*

PUT to four Ounces of the Dissolv'd Body of the Vipers left in the Retort, one Ounce of *Tinctura Regalis*, before-mentioned in the Chapter of Antimony, by a Drachm at a time; then to two Ounces of the Salt, and half an Oun. of the Ætherial Oil, put one Pound of the same *Tinctura Regalis*; put them in a Matras, which make a Circulatory, and let them stand ten Days in the Sun, or an equivalent Heat, shaking them every Day: when you see the Tincture has Imbib'd all the Salt and Oil, take it out, and put it to the Dissolution of the Vipers aforesaid; and when by strong agitation you have loosned the Dissolution from the Retort, put it all into a Matras, and let it Circulate in a very gentle Heat ten Days, shaking it every Day; In this time all the several Substances will be united into an Essence, which pour off from the Fœces into a clean Vial, and keep carefully stopt for Use.

This

This Essence is endued with all the Vertues of the Salt of Vipers, and if any Animal Medicine exceeds the Salt, it is this.

Its *Dose* is from twenty to one hundred Drops, in any appropriated Liquor.

Observations.

*Observations.**Distillat.
of Vipers.*

Some take only the Bodies, pulling off the Skin, and cutting off the Heads and Tails, which they put away; also they put away their Heart and Liver; but all these yield as much Salt, proportionable to their weight, as the Bodies do: And you may as well perform this Operation in a good Sand Furnace, and uncoated Retort, as you can in a Reverberatory.

*Rectificat.
of the Salt.*

If you desire it more nicely Separated from all the Oily Particles which it carries with it in the First Rectification. Mix three parts of clean, and very dry Chalk, in fine Powder, with one part of Rectify'd Salt of Vipers; put into a Matras, or uncut Cucurbit, with its Head and Receiver well Luted, and with a gentle Fire Sublime the Salt, and it will leave all its Oily Particles Absorb'd in the Chalk.

*Sudorifick
Water of
Vipers.*

The Hair-Cloth is fastned over the Mouth of the Cucurbit, to keep the Vipers from jumping up into the Head, when they begin to be heated, by which means they may break the Head, and get out, whose Biting then would be extremely pernicious, by reason of their irritation by the Heat of the Fire. When

When you put the Spirit of Nitre to *Essence* of the Vipers, place the Vessel where the *Vipers*. Fumes may ascend without offending you. Also be careful not to put above an Oun. or two at once of the Spirit of Wine to that of Nitre, wherein the Vipers are dissolved, lest the Ebullition shou'd be so strong, as to fly out of the Vessel with violence. The repeated Distillations with new Tartaris'd Spirit of Wine, are to elevate as much of the Spirit of Nitre as is possible, and to hinder its fixing the Salt of Vipers.

One Gallon of Water will be sufficient *Rectificat.* to rectifie four Ounces of the black Oil of *the Oil.* in, and generally by that time you have Distill'd two Quarts of Water, you will have all the *Aetherial Oil* come over.

The Ounce of *Tinctura Regalis* is put to the dissolv'd Vipers, to satiate (in *the Oil,* part) that Acidity still remaining in *Salts, &c.* them, which otherwise might too much fix the Salt of Vipers, and reduce it to the Nature of common Sal Armoniack, which being again mixt with fix'd Alkalies, may be Sublimed into an Animal Urinous Salt, as it was before.

You may likewise Dulcifie the Dissolution, by putting to it (a little at a time) so much pure fix'd Nitre as will satiate

Y satiate

satiate its Acidity: then let it stand in a cold place, and it will shoot into a combustible Salt Peter again, and the Dissolution will thereby be freed from the Corrosive Spirit of Nitre, which would have changed the Volatile Salt into that which some call the Secret Sal Armoniack.

N. B. That whatever Animal, Vegetable, or Mineral, is dissolved in the Spirit of Nitre, it will be made to Precipitate with the fix'd Salt; and on the contrary, whatever is dissolv'd in the *Ole. Nitri, per deliquium*, or by its fix'd Salt, will be separated by the Spirit; and this (if carefully Elaborated) may be done without prejudice to the Matter dissolved, and to the augmentation of their Vertues, by digesting and ripening their undigested Crudities.

CHAP.

CHAP. III.

Of HONEY.

IT is the Juice of Heavenly Dew, which falls upon Flowers and Herbs, and is gathered by that Industrious Insect the Bee, and in them further digested. The best is of a bright Yellow, having a pleasant Scent, and an equal Consistence in every part.

It Nourisheth, Cleanses and Opens. It is Pectoral and Diuretick, cures Coughs, and resists Putrefaction.

Tincture of Honey.

TAKE one Pound of pure Virgin Honey, despume it in a clean Earthen Pan, and put to it three Ounces of pure Salt of Tartar finely pulveriz'd; stir them well together, and an Ebullition will arise; stay till it is over, and take off the Scum, and put the Mixture into a Cucurbit uncut, and pour upon it one Pound and an half of Tartariz'd Spirit of Wine; close the Mouth, and set it in the Heat of Digestion fourty eight Hours.

Y 2 agt.

agitare the Matter three or four times a Day, and in that time the Spirit of Wine will have charged it self with the purest part of the Honey. Decant it from the Fœces into a new Cucurbit; Lute on an Head and Receiver, and draw off one half of the Spirit of Wine in a gentle Heat. That which remains will be a sweet thick Tincture, being an excellent Pectoral Medicine.

Its *Dose* is from fourty Drops to two Drachms.

Spirit of Honey.

MIX one Pound of Honey with three Pound of clean Sand, and put it into a Retort in a Sand Furnace; make a Fire of the first Degree for two Hours; Increase it to the Second for two Hours more, and so go on to the Third, where let it remain till no more Fumes or Drops will fall. You will find an Empyreumatical Spirit and Oil; put them both into a Cucurbit, and with a Fire of the First Degree draw off the insipid Water, and by the Second you will raise the Spirit.

It is an Acid Spirit which dissolves Pearl and Coral; and some use it to procure, or make Hair to grow.

Sweet

Sweet Honey Water.

Take good *French Brandy* one Gallon, of the best Virgin Honey, and Coriander-seeds, *ana* one Pound, Cloves one Ounce and an half, Nutmegs one Ounce, Benjamin and Storax, *ana* one Ounce, Benilloes, number four, the thin Rind of three large Lemons. Bruise the Cloves, Nutmegs, Coriander-seeds and Benjamin, cut the Benilloes in small pieces ; put all into a Cucurbit, and pour the Brandy to them, and after they have digested fourty eight Hours, Distil off the Spirit in *Balneo Mariae*.

To one Gallon of this Water add of Damask-Rose, and Orange-flower-water, *ana* one Pound and an half, of *China*, Musk, and Amber-greese, *ana* five Grains. First grind well the Musk and Amber-greese with some of the Water, and afterwards put all together in a large Matras ; shake them well, and let them Circulate three Days and Nights in a gentle Heat ; then let all cool, Filter, and keep the Water in a Vial well stopt for Use.

This Water I often made for King James : It is an Anti-paralitick, smooths

the Skin, and gives one of the most agreeable Scents that can be smelt. Forty or fifty Drops put into a Pint of clean Water, are enough to wash the Hands or Face with; and the same proportion to Punch, or any Cordial-water, gives a most pleasant Flavour.

Oil of Wax, with its Spirit and Butter.

PUT three Pound of clean warm Sand into a Pan, slice into it one Pound of Bees-wax, in small pieces, stir it about that the Wax may melt, and mix equally with the Sand; when 'tis quite cold, put it into a Retort, and place it in a Sand Furnace; make Fire of the first Degree one Hour; increase it to the Second, and keep it so two Hours, and after in the Third for three Hours, in which time the Oil and Spirit, with some of the Butter, will be in the Receiver, and the rest of the Butter will stick in the Neck of the Retort; you may separate and keep them apart.

Their Operation is Diuretick.

The Dose of the Spirit is from ten Drops to fourty or fifty, in any appropriate

priate Liquor. The *Dose* of the Oil is from five to twenty five Drops, mixt with Sugar, to make it the better Incorporate with Liquor. The Butter is the same. The Butter and Oil are also outwardly apply'd, and are a good Dissolvent for Tumours.

Observations.

LE T the Earthen Vessel you mix the Honey and Salt of Tartar in, be *Tincture of Honey.* Capacious enough to contain six or eight times the quantity you put into it, otherwise the Ebullition will be so strong, that it will cause it to boil over.

The Sand is mixt with the Honey, to *Spirit of Honey.* keep it from boiling over, notwithstanding which, it will swell and bubble, and therefore you ought not to fill the Retort above half full. In its Rectification, fit a Receiver, without Luting, and as soon as you Taste any Acidity, change the Receiver, Lute it, and draw off the Spirit in an Heat not exceeding the third Degree; and if you add a Twelfth, or Sixteenth Part of Spirit of Nitre Dulcified, it will abate its unpleasant Scent.

*Sweet Hon.
Water.* The Honey is added to cause a kind of Fermentation, by which it more powerfully opens the Aromaticks, which would not all otherwise ascend in the gentle Heat of *Balneo*.

You may mix the Wax with three times its weight of quick Lime, especially if you rather desire the Oil than the Butter; for the igneous Particles of the Lime mixing with it, rarifies it more than any other Bole; and if you desire to convert all the Butter into Oil, one or two Rectifications from quick Lime will produce it, and make it more penetrating then *Ol. Cerae*, made any other way.

CHAP. IV.

Of Sows, or Hog-Lice.

They breed in Cellars and moist places, under Stones, old Casks, and Logs of Wood; being touch'd, they gather themselves up like round Beads; they are said to Digest, Extenuate, Open, Cleanse, and Reslove Tartarous Mucilage; are good in the Jaundice, Cholick, Stone, and Difficulty of Urine.

The Spirit, Volatile Salt, and Oil of Hog-Lice.

PUT what quantity of *Millipedes* you please into a long bodied Retort, so that it be not above half full; place it in a Sand-Furnace; Lute on its Receiver, and give it the first Degree of Fire till the Retort is throughly hot; then increase the Fire to the Second, in which keep it two or three Hours (according to the quantity of Lice) and some Liquor will drop into the Receiver, and the Volatile Salt will begin to rise; increase

crease it to the Third and Fourth Degree, till the Receiver grows cool; then cease, and take off the Receiver, where you will have Spirit, Oil, and Salt, which you may separate and Rectifie apart; or put all together into a long Neck'd Matras, Luting on its Head and Receiver, and separate the Salt by Sublimation, as you do that of the Vipers.

Its *Operation* is Diaphoretick and Diuretick.

Its *Dose* from ten, to fifty or sixty drop.

Observe. You may make the Tincture and Essence of them in the same manner, as you are directed, in the following Chapter of Ants.

CHAP.

CHAP. V.

Of the A N T.

THIS is a wise and Industrious Insect, making Provision in the Summer, for their support in Winter, observing a regular Discipline in their Labour, Regimenting their Number, and as it were constituting Officers oyer those that are appointed to work, to see its performance.

I have with delight and wonder observed them to Issue out of their Nests in order, and when loaded with Provision, returning in a continued Line, without jostling those which have disburthened themselves, and are marching out for more Stores. This Labour they perform in the Full of the Moon, and rest in the New.

They are Black, or Reddish, the Male wing'd, the Females not; in the Winter they breed Eggs and Worms, which in the Summer become Ants; those which breed under Trees, and smell sowr, are accounted best: They are said to Provoke Venery, and Create Courage; They use their Eggs to restore Hearing.

Spirit

The Spirit, Oil, and Volatile Salt of Ants.

TAKE what quantity of Ants you please, put them in a long-bodied Retort, or an uncut Cucurbit; let not the Vessel be above half fill'd with the Insect; fit a Recipient, and Lute the Joint well; give gradual Fire, as you did to the *Millipides*, and in all things proceed as in the Distillation and Rectification of them.

The Tincture of Ants.

TAKE what quantity of Ants you please, put them into an un-cut Body, and put upon them so much Oil of Nitre, *per deliquium*, as will cover them; let them stand in a gentle Heat of Digestion five or six Days, in which time they will be dissolved; towards the end of which you may increase the Fire three or four Hours to make them boil; then let them cool, and pour upon them three times their weight of Spirit of Wine; stop the Body with a small Matras, and Lute the Joint well; let it stand

stand in a good Digesting Heat till the Spirit is well tinged; let that cool, and pour it off; put on more Tartaris'd Spirit of Wine, and set it again in Digestion, till it has also acquir'd a Tincture, which will be in two or three Days time; Decant that Tincture to the first, and put both into a Cucurbit, Lute on its Head and Receiver, and in *Balneo Mariae* draw off two Thirds of the Spirit of Wine; that which remains in the Cucurbit let cool and settle, and by gentle Inclination pour the Tincture into a clean dry Vial for Use.

In Vertue it exceeds that which is attributed to the Creature in every respect.

Its Dose is from ten, to sixty or seventy Drops, in a Glass of Canary, or Wine and Water.

The Essence of Ants.

Dissolve Ants in Spirit of Nitre, in the same manner as you did the Vipers, Skimming off the Froth and Decanting it from the Fæces; to the clear Dissolution of four Ounces of Ants, put of its Rectify'd Oil four Drachms, which drop

drop in by half a Drachm at a time; then put also, by a little at a time, two Oun. of its Salt; when all is mix'd, and the Ebullition ceased, shake them well, and set them in a very gentle Heat of Digestion fourty eight Hours, in a Circulatory Vessel; then, by gentle Inclination, pour off the Dissolution from the Fœces, into a clean Cucurbit; to which also put so much fix'd Nitre in Powder, by a little at a time, till no Effervesence appears; let them stand cool and quiet, and in a few Hours they will be shot into a renovated Salt Peter: If any Liquor remains with the Crystals, pour it off into a clean Cucurbit, with its Head and Receiver, and in a very gentle Warmth dry it; likewise dry gently that Precipitate, which the Spirit of Nitre let fall, when it imbrae'd its own first Salt.

Then put the renovated Nitre, Precipitate, and the Residence of the Liquor which was Evaporated, all together, grind them in a Glas, or Marble Mortar, put them in a Matras, pour upon them one Pound of Tartaris'd Spirit of Wine, invert a small Matras, and Lute the Joint well, and let it stand in Digestion three or four Days, shaking it every Day once or twice, then let it cool and settle, and Decant off the Tinged Spirit, and to the Matter remaining, put another Pound of Tartaris'd Spirit of Wine; let it stand as before, to Extract more Tincture, and so

so proceed, till it gives no colour to the Spirit of Wine. Then put all the ting'd Spirit into a Cucurbit; Lute well on its Head and Receiver, and in a gentle Heat of *Balneo* draw off three Fourths of the Spirit, which keep well stopt, for any such like Operation hereafter.

That which remains in the Cucurbit let cool, and pour it into a clean Bottle, which keep well stopt for Use.

This is the most Excellent Medicine which is Prepared of this Industrious Insect.

Its *Dose* from ten, to seventy or eighty Drops.

Observations.

*Observations.**Rectificat.
of the Oil
and Salt.*

After you have separated the Salt by Sublimation, put the Oil and Flegm remaining in the Matrás into a Retort, with a long Body ; rinse out as much as you can of the Oil which adheres to it, till it is above half fill'd with Water ; place it in a Sand Furnace, and give it gradual Fire till the Water and Oil bubble a little ; but take care it boil not over, for then your labour will be lost.

If you put a quarter part of *Spir. Nit. Dulcis*, to that of the Oil in its Rectification, it will render the Oil more pleasant, and no way hurt its Vertue.

*The Tinct.
of Ants.*

If the Oil of Nitre be very strong, the Spirit of Wine will not mix with it, but will swim upon it, as Oil doth upon Water, and will only prey upon the Animal Sulphur opened by the Oil ; remember to shake them often while they stand in Digestion.

*The Essence
of Ants.*

Place the Vessel in which you make the Dissolution in such a place where the obnoxious Fumes may Evaporate without offence, and continue it there, after you have

have Decanted it from its Fœces, till you have charg'd it with the Volatile Salt and Oil of the Insect, and also with its own fix'd Salt ; then set it in Digestion, as the Process directs.

CHAP. VI.

Of Spaniſh Flies.

THEY are a sort of Beetle, of a golden greenish Lustre, produced from a Worm like a Caterpillar ; they breed of a Moisture proceeding from Wheat, the Leaves of Ash, and Poplar. The best are found amongst Wheat, and in Meadows : They abound in *Provence* and *Languedock*, from whence we are chiefly supply'd.

They are Hot, and very Corrosive, seldom us'd inwardly, without good Correction.

The Essence of Spanish Flies.

BRUISE four Ounces of Cantharides, put them into a Cucurbit, and pour upon them, by a little at a time, twelve Ounces of Spirit of Nitre, and let them stand in Digestion twelve Hours; then with a Glass Spoon, or Spatula, take off a black Scum from the Surface of the Spirit, which cast away; pour gradually upon them one Pound and half of Tar-taris'd Spirit of Wine, mix them well by shaking, and place them in a Sand Furnace; Lute on a Head and Receiver; kindle the Fire, which gradually increase to the Second Degree, and in that Heat draw off a Pound and half of Spirit, which keep by you for farther Use.

To that which remains in the Cucurbit, put (by a little at a time) so much fix'd Salt Peter, as will Satiate its Acidity, which you will know by the Ceasing of its Ebullition. Then pet that Mixture into a Glass or Marble Mortar; put to it one Ounce of Refin'd Camphire, and grind them till they are well Incorporated, and return them again into the Cucurbit; rinse out the Mortar with some of the Spirit of Wine which you drew off

off from them, which pour into the Body, with the remaining part of the Spirit of Wine; shake them well, and set them in a Heat of Digestion; make the Cucurbit a Circulatory; Lute the Joint close, and let them stand in that Heat eight or ten Days, shaking them well about every Day; then let it cool, and stand to settle; pour off the Tincture into a clean Cucurbit, and in a very gentle Heat draw off one half, or more, of the Spirit, which again put upon the Mixture, to Extract more Tincture; and when that Spirit is again Tinged, draw off two Thirds, which put the third Time to Extract more Tincture, and Distil as before, still putting the Tincture remaining after Distillation of the Spirit, to the first Tincture.

Then take one Drachm of Amber-greese, half a Drachm of Musk, and two Drachms of white Sugar-Candy; grind them very well together, with a little of the Spirit last drawn off; pour them into a Matras, and to them put four Ounces of the aforesaid Spirit, close the Matras well, and set it to Digest four or five Days; then put it to the Tincture of Cantharides, also in a Matras, and let them Circulate together four or five Days more; then pour it in-

to a clean dry Bottle, which keep well stoppt for use.

It is accounted a great Cordial, and really is endu'd with that quality which is attributed to the Essence of Satirion Root.

Its *Dose* is from ten to one hundred Drops, in a Glass of Canary-wine, or any other Vehicle which better pleases the Patient.

Observations.

Observations.

THAT you make the Dissolution in a place where the Fumes may freely ascend without Annoyance to the Operator ; the same Care must be taken in mixing the Spirit of Wine with that of Nitre ; and also the same Caution ought to be us'd in putting the fix'd Salt of Nitre to its Spirit.

The Camphire absorbs the Corrosive Quality of the Fly ; and the Fix'd Salt of Nitre Satiates that of the Spirit, so that there is no need to fear any ill consequence from either.

The Dissolution Subtilizes the Fly, and Corrects all its Poisonous Quality.

The Discharge of the dissolv'd Particles, by the Fix'd Salt, renders it fit to yield its Essential Being to the Spirit of Wine.

F I N I S.

THE fore-going Preparations are divided into two Courses, which I design to perform once every Year, so long as God shall enable me; The First beginning about the Tenth of *April*, and the other about the Tenth of *September*. And therefore those Gentlemen who desire to see the said Courses, with the whole Dependancies thereof, may be Accommodated for two Guineas and an half, paying one Guinea entrance, by the First of *April* or *September*, and the rest at the beginning of each Course.

And if any Gentlemen, to the number of Four or Five, desire to see such Processes as they will conclude of in the Intermission of my Course, they may be Accommodated for one Guinea a Piece, and taking off the Preparations at a reasonable and common Price.

The April Course.

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